THE GENESEE FARMER.

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PRINCIPLES OF IMPROVING DOMESTIC ANIMALS.

CHAPTER IV.

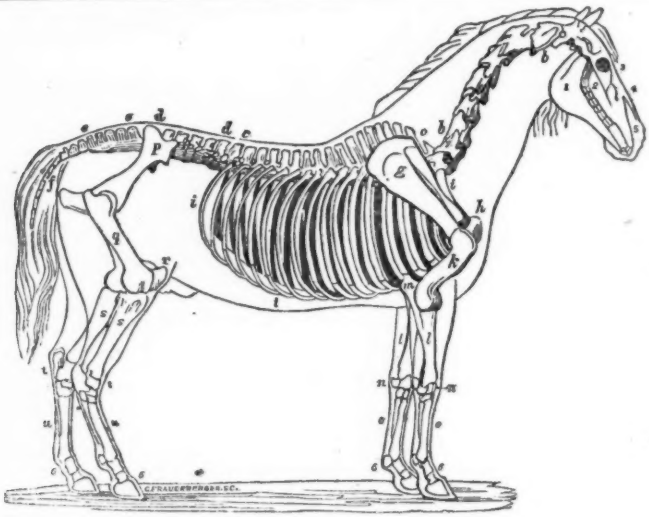
THE HORSE.

Of the domesticated animals whose form and properties have excited the greatest observation and interest, the horse is said to occupy the highest rank. His powers of speed, of bearing burdens, and hauling loads are well known; and perhaps no other quadruped differs more in size, or the shape of its bones, according as it has been bred and kept for particular purposes. If one wishes to have horses possessing the faculty of speed, he unites in blood those that possess the form and properties which he seeks to reproduce in the progeny; if he desires horses having strength as well as action, fitting them for service on the road, he will select females and males whose external form indicates their adaptation to the use required; and if he wishes horses adapted to heavy work on the farm, or in carts and drays in commercial towns, he will breed only from such animals as have great weight of carcass, and the most powerful muscular developments. For family use as saddle horses, ponies, and animals that approximate them in character have many advantages. They are easily kept, generally hardy, and able to perform a good deal of labor without extra food, or liability to disease.

In the horse, as in all mammiferous animals, there is a long chain of distinct bones termed *vertebræ*, which, bound together by joints, cartilage, and ligaments, constitute the spinal column. Each bone has a perforation through it, so that when the whole vetebræ are connected together, there is a continued canal passing along the interior. Besides the perforation forming this canal, each bone in the spinal column has two lateral projections, called transverse processes; one upwards, termed the spinous process, the latter forming the sharp elevation of bones which commences with the withers, and extends along the back. The bones of the head, called *cranium*, are at the anterior termination of the spinal column. The bones of the face are in two divisions; the first, the lower jaw, is in one large piece; the second, the upper maxillary bones, and various other pieces, united together. In the sockets of the bones of both jaws are inserted the teeth. These consist of six incisor teeth in each jaw, that is twelve incisors, (cutters) commonly called nippers; of two canine teeth in each jaw, one on each side of the incisors, and four canine teeth or tusks in all; and next to these, and at some distance from them, are six molar, or grinding teeth on both sides of each jaw, that is, twenty four grinders in all. By adding the above numbers together, it will be seen that the horse has forty teeth for the proper mastication of his food.

In the head, there are ten distinct bones; namely, two frontal bones, which form the forehead, two temporal bones, in which lodge the internal organs of hearing, and others that need to be seen to be understood. Within the cranium, and filling it, is the brain, the substance of which extends along the whole length of the back bone to the tail, and is called the spinal cord. From this cord and the brain proper, proceed fine cords, termed nerves, which are distributed to every sensible part of the body. Next to the bones of the head are those of the neck, called *cervical* vertebræ, which are seven in number; next to these are the bones of the back eighteen in number, called *dorsal* vertebræ; next are *lumbar* vertebræ, five or six in number; next is the *sacrum* so called consisting of five vertebræ united together, and forming a single piece; and last are *caudal* vertebræ, or bones of the tail, which vary in number from thirteen to eighteen.

In the following figure, 1, is the lower jaw, 2, 3, 4, 5, are the other bones of the face; *b b* the bones of the neck, or cervical vertebræ; *c c* the dorsal verte-



bræ ; *e e* the sacral vertebræ ; and *f* is the caudal vertebræ, or bones of the tail. With the vertebral column are connected, (1) the ribs *i i i* (2) the scapula or shoulder-blade *g*; (3) the bones of the pelvis *p*. With the shoulder-blade are connected the fore-limbs, consisting, (1) of the humerus or great bone of the shoulder *k* ; (2) the fore arm *l m*, of which *m* is the elbow; (3) of the bones of the carpus or knee *n* ; (4) of the cannon-bone or shank *o* ; and (5) of the bones of the pastern and foot (6). With the pelvis, *p*, are connected the bones of the posterior limbs, namely, (1) the femur or great bone of the thigh *q* ; (2) the patella or stifle-bone *r* ; (3) the tibia or great bone of the leg *s* ; (4) the bones of the hock *t* ; (5) the cannon-bone *u* ; (6) the bones of the pastern and foot 6.

It is from the dorsal vertebrae, or bones of the back, that the ribs proceed, forming hoops which enclose the chest and a part of the abdomen.

The number of dorsal vertebræ, and consequently of the ribs, on each side, is eighteen, but sometimes one, or even two more are developed. The ribs are mostly connected by cartilaginous bands with the scapula or breast-bone of which the upper termination, *h*, appears in the figure. The breast-bone, flat and of a spongy consistence, is formed of several pieces united together, and is sometimes likened, from its form, to the keel of a ship. The chest contains the lungs and heart, and is separated by a muscular partition from the abdomen, which contains the liver, the stomach, the intestinal canal, the kidneys, and other organs.

The shoulder-blade or scapula *g*, of which there is one on each side of the chest, is a flat triangular bone, with its narrow end pointing obliquely downwards. It is attached to the chest by intervening muscles, and strengthened in its position by other powerful muscles with which it is connected. Into a shallow cavity at the lower part of this bone, is inserted the humerus or bone of the shoulder. The humerus corresponds with the bone of the same name in man, that is, with the portion of the human arm which is between the elbow and shoulder, but is so covered with muscles in the horse, as to seem to form a part of the trunk. It is bent downwards and backwards in a direction opposite to that of the shoulder-blade, by which disposition the parts act like a spring to lessen the effects of those terrible shocks which they sustain, when the animal being raised from the ground, his weight is received upon his fore extremeties. The head of the humerus working in a very shallow cavity in the shoulder-blade, the bone has great freedom of motion. Its lower extremity is fitted by a hinge-like joint into the next in order of the bones of the limb, namely, the bone of the fore-arm.

The bone of the fore-arm corresponds with that portion of the human arm which is between the elbow and the wrist, but the fore-arm in the human subject, consists of two bones, termed respectively, radius and ulna. In the horse, there were likewise two bones in the young state, but they became joined together; though the ulnar portion, as in the figure, is still to be distinguished projecting behind the up-

per part of the fore-arm, and receiving the name elbow in the horse as in man. To the elbow are attached powerful muscles, for extending the limb, and its size is one of the points looked to by jockeys, as indicative of what is termed action.

The part termed the knee in the horse corresponds with the wrist of the human arm, and is for this reason termed carpus. It is composed of seven, and sometimes of eight small bones. These bones serve for the attachment of muscles, and for giving flexibility to the joint. By being many, the weight is divided amongst them, and thus the hazard of fracture or dislocation, is lessened. They are separated by elastic cartilage, bound firmly together by ligaments, and kept constantly lubricated by a secreted liquid. They form an exceedingly strong and perfect joint, scarcely subject to dislocation of parts, although being the farthest removed from both extremities of the limb, they are at the part of it most apt to be injured.

The next bones form what is termed the fore-leg of the horse, which consists of three bones, namely the large cannon bone, or shank, with the two smaller splint-bones, as they are called, behind. The splint-bones extend downwards for about two-third parts of the length of the principal bone with which they are united by a ligamentous matter. This matter tends to become bone, and the ossification extending beyond the point of union of the bones, there is formed the bony tumour so common in the horse, *splint*.

To be continued.

THE MISMANAGEMENT OF WOODLAND.

Compared with European skill in the management of forests and woods, our practices appear equally wasteful and barbarous. We neither take care of the valuable timber which nature has so liberally supplied to this continent, nor plant the seeds of forest trees to meet the growing wants of a rapidly increasing population, while the woodlands of the whole country are scourged by the unresting axe and by consuming fire. Young cattle, and other stock, lend no feeble aid in the work of destroying the undergrowth of woods, which is indispensable to supply the places occupied by old trees that must soon fall to the ground. In short, the mismanagement of woodland is one of the most noticeable defects in American agriculture and public economy. We shall soon have a population of fifty millions, whose system of railways, inland and foreign commerce, love of fine houses, furniture, caarriages, and all other articles of luxury and utility, made in part or wholly of wood, will create an almost unlimited demand for lumber and timber in the United States.

For several centuries France has contained a dense population, and has comparatively little coal for fuel. Hence, both experience and science have co-operated to develop the best methods of preserving forests, and the wisest processes for felling trees, (whether to cut all the timber at one time, or to fell only the old and matured trees,) and at what season of the year trees ought to be cut to secure the greatest durability to the wood. It is the practice of the French people not to cut off their woods oftener than once in twenty or twenty-five years, and by *law*, when cut, the owner is required to cut *the whole smooth*, with the exception of a very few trees which the officers of the government had marked for a larger growth. Experience in this country fully sustains the wisdom of allowing the young growth the full benefit of sunshine and the natural resources of the soil, uninjured by the shade and great draft on the land by more advanced and much stronger plants. To cut down trees in a scattered manner, as do most Americans, is like attempting to harvest and to grow a crop in the same field and at one and the same time. Many have planted acorns, chestnuts, and other seeds, in thin, open places in woods, in the hope of obtaining a valuable crop of young forest trees. It would have been as wise to plant an apple orchard in the woods as the seeds named, expecting a healthy growth. To obtain the maximum organization of wood on any given area, from year to year, is a problem in vegetable physiology and forest-culture that few have studied in any nation, and perhaps fewer in this than in any other equally advanced in civilization.

The Hon. John Welles, in an able article published in the *Massachusetts Agricultural Repository*, recommends cutting hard-wood trees so soon as they reach the age of forty or fifty years. He says: "Though trees may shoot up in height by standing longer, yet the period of the most rapid vegetation is mostly over, and by allowing them to stand longer, much of the undergrowth is necessarily destroyed."

Let us assume that one has just cut off ten acres of woodland in winter, and that it has sprouted finely in the spring. Dividing the next forty years into four decades, in which will the growth of new wood be the largest? We believe in the second and third, and not in the first nor in the fourth.

If this opinion is well-founded, then forests should be cut off, if kept for firewood, once in thirty years, to give the maximum of timber to the acre. The quantity in cords, or tons of seasoned wood, depends mainly on the degree of fertility of the soil—some land producing three or four times more than an equal area of other land.

It is injurious to the growth of timber to remove the leaves from woods, as bedding for hogs, cattle, and horses, as is often done to increase the manure heap, and sustain fruitfulness in cultivated fields. It is true that leaves may be worth more to aid in forming annual crops of grain and hay than a crop of wood to be cut only once in twenty or thirty years; but to grow a crop of forest leaves every year, and remove them from the soil, is a certain process, ultimately to impoverish it. In Europe, great care is taken to prevent such an injury to the land.

Where trees are scattering, some advantage may be realized by cultivating woods grass, or blue grass, among them. This, however, is to make forest-culture secondary to grazing; and where one has a good deal of land in woods, the two interests may be to some extent advantageously combined. When the growth of wood or timber is a primary object, no stock of any kind ought to run at large among the trees, to eat and kill the young growth.

According to our experience, chestnut and locust give the earliest return from planting, of rail-timber and fence-posts. On our farm in the District of Columbia, these trees grow with great rapidity. Where fencing is dear and scarce, we recommend the black and yellow locust, and chestnut, as quickly-growing and lasting wood for the purpose named. In open fields, insects attack and destroy locust trees; but they seldom do so when surrounded by woods.

Chestnuts should be planted as soon as ripe, and before the nuts become dry, in rich loam well cultivated. All kinds of trees do best on good land, and generally pay for any extra pains one may take to promote their welfare.

IMPORTANT FACT IN AGRICULTURE.—Whatever may be the nature of the soil, or of the crop cultivated, it should always be the aim of the farmer to grow full crops. Partial and sometimes extensive failures will even then but too often occur; but to neglect making the best known preparations, or only to prepare for half a crop, has a direct tendency to unprofitable farming.

AGRICULTURAL FAIRS AND CATTLE SHOWS.

FROM appearances, we should judge that the *Agricultural Fairs* the present year are more general, and undertaken with more spirit than ever before. A few have been held at the time of writing this, and more will be held before this number reaches our readers. What remarks we may make, therefore, will have little effect the present year; yet a word or two may produce the desired effect in the future. Of late, our Agricultural Fairs are partaking too much of the nature of *shows*. There is getting to be too much clap-trap—too much humbug in most of our fairs. One would think, to read the notices of the wonderful performances, that BARNUM had been abroad, instead of the schoolmaster, or that his *life* and the history of his humbugs was exerting a powerful influence for evil. Connected with some of the State Fairs, are to be exhibitions of Lady Equestrianism,—all *right, perhaps*, and certainly less objectionable than many other things we notice. In addition to this, they are to have in Ohio an exhibition of *Youthful Equestrianism*—a brigade of boys on ponies. S. D. HARRIS, of the *Ohio Cultivator*, is to be the Major of this brigade. We would suggest that after the regular appointed speaker concludes his address, that they have a little *Youthful Elocution*.

"Tall oaks from little acorns grow,"

wouldn't be bad. Worst of all, we have had in some instances, connected with shows of sheep and sows, and pigs and bulls, *baby shows*. If this is right, let us have the points to be aimed at in breeding the *genus homo*. And why not offer premiums for the mothers. This whole thing is too disgusting for serious remark. It is degrading to human nature, this classing together man and the brute.

Our shows of horses we fear are partaking too much of the character of races, a practice we never much admired, although we always did admire that most noble of all animals over whom man has control.

The *Third National Exhibition of the United States Agricultural Society*, to be held in Boston on the 23d, 24th, 25th, and 26th of October, we have no doubt will be the best exhibition ever held in the country. The managers have well matured their plans, and under the direction of the efficient President, MARSHALL P. WILDER, are working with untiring energy. The city authorities are extending every necessary aid, and a few weeks since,

when in Boston, we noticed perhaps a hundred teams employed by the city in preparing the ground. We were shown by Mr. WILDER a subscription of $20,000, to sustain the exhibition. The smallest sum on this paper was $500. Ten thousand dollars are offered as premiums. We were much pleased to learn, at a meeting of the directors to which we were very kindly invited, that a new feature in this country is to be introduced. Instead of the rough, unsightly board sheds for horses and cattle, a frame is to be erected, to be covered with white canvass, ornamented with a short drop curtain. This is similar to the English shows, and will give the grounds a very beautiful and picturesque appearance. Mr. E. C. WILLIAMS, of this city, erects these tents, and this is a sufficient guarantee that it will be done in excellent taste. As we left Boston before the arrangements were completed, we wrote the Secretary for further information, who has kindly sent us the following letter:

"SECRETARY'S OFFICE U. S AG. SOC'Y,
BOSTON, September 10, 1855.

"*My Dear Sir*—Your note of inquiry as to the Show of the United States Agricultural Society, to be held in the city of Boston on the 23d, 24th, 25th, and 26th days of October next, was duly received; and of such arrangements as are already made or decided upon, I hasten to advise you.

"The Show Grounds are situated in the limits of Boston, within reasonable walking distance of any part of the city; but ample facilities will be provided for those who prefer (and who does not) to ride. A fine public square, generously granted by the corporation for the purposes of the exhibition, has been graded to a perfect level, and will be inclosed by a tight board fence ten feet high. Within this inclosure a one-half mile track for the trial of horses will be carefully prepared. Its curves are such, as our engineer assures us, that a locomotive can describe them at top of speed; consequently, locomotive quadrupeds can, with ease, put out their full powers without '*breaking up*,' as on many courses too often happens, to the damage of the horses' reputation for speed, the annoyance of drivers, and the disappointment of the 'crowd.'

"On the north, east, and south sides of the grounds, adjoining the fence, will be erected stables for stock, extending in length over three thousand feet, with inner lines of stalls, at either end of the track.

"In the accommodations for animals, we have adopted many of the best features of the English shows, which I, at least, have never seen copied in this country. The effect to the observer will be fine, and the occupants in no whit losers by the change.

"The Cochituate water, of which Bostonians boast, will be introduced and plentifully distributed through every part of the inclosure, for the better convenience of the exhibitors and the exhibited.

"Seats for five thousand spectators will be built on the west side of the track, on the home stretch, so that occupants may oversee the two most important parts of the "trial of speed," viz., the start and the coming in; while their elevation will enable them to witness all the exciting and tantalizing occurrences incident to a trot—the baulk—the break—the widening gap—the favorite's nose nearing the distance post when his competitors' tail has passed the goal! This improvement has, I am pleased to see, been adopted at most of our large shows.

"All the buildings upon the grounds will be erected under the superintendence of Mr. JOHN R. HALL, architect to the Society, whose professional taste and skill have secured to him an enviable reputation. These erections are beautifully designed, and with a proper distribution of the large and smaller tents over the vast area, can not fail to produce a fine effect.

"'An ounce of prevention is worth a pound of cure,' and we shall accordingly take every precaution against the occurrence of accidents; but as 'accidents will happen in the best regulated families,' our old friend, Dr. GEO. H. DADD, who is our veterinary surgeon, will be in constant attendance, to render his professional services in cases of need.

"Of course, no one can now speak with any certainty as to the number or character of the entries which will be made; but we shall be sadly disappointed if in quality and quantity of stock it does not excel all our previous exhibitions; and, as you know, we had no reason to be ashamed of either of them. We calculate with considerable confidence on entries from your State, as well as from most of the other States. But do not judge of our Massachusetts animals by the Durham bull shown at Springfield, Ohio. If your breeders conclude to come on, do not allow them to draw on us, *before they leave home*, for their premiums as being *a sure thing*.

"The Horse Department will be very certain to delight every lover of that noble quadruped. Already we have been advised of the intended exhibition of some of the finest imported animals in the country; and our horses of home manufacture will be in mass convention, you may rely on it. The first trotters in America will try their speed on this national course for the championship, and the most famous stallions will be here to uphold their reputation. Come and see them, and bring all your friends.

"The show of Sheep and Swine will undoubtedly be great and excellent, for their home is but a few hours' ride hence.

"Our premium list has been sent to you, by which you will see that we offer in the aggregate about ten thousand dollars. Our expenses may be estimated as near ten thousand dollars more. Our admission fee is but twenty-five cents. So please give us your good wishes for one hundred thousand visitors. We hope for more!

"On the afternoon of Friday, the last day of the show, a Grand Agricultural Banquet will be held under a large tent on the grounds. Seats for three thousand persons will be provided; and when you know that our excellent President, MARSHALL P.

WILDER, will preside, and that EVERETT, CHOATE, WINTHROP, with other eminent gentlemen from other States, are expected to address the assemblage, you will with reason anticipate an unusual treat for the physical and mental man.

"I am on the point of departing for the Vermont and New Hampshire State Shows, and this fact will account for the insufficiency of my reply to your queries, and for the haste with which I subscribe myself, Yours, truly,

WILLIAM S. KING."

The New York State Fair is to be held at Elmira, on the 2d, 3d, 4th, and 5th, of October. The citizens of Elmira are making vigorous preparations, and we confidently anticipate that this will be one of the most successful exhibitions ever held.

The following are the State Fairs yet to be held:

Michigan	Detroit	October 2— 5.
Missouri	Brownville	" 2— 5.
Tennessee	Nashville	" 2— 6.
Wisconsin	Milwaukie	" 3— 5.
Illinois	Chicago	" 9—11.
Connecticut	Hartford	" 9—11.
Canada West	Cobourg	" 9—12.
Iowa	Fairfield	" 10—12.
North Carolina	Raliegh	" 16—18.
Indiana	Indianapolis	" 17—19.
Alabama	Montgomery	" 23—26.
Maryland	Baltimore	" 30—Nov.2.

THE POTATO ROT.

THE fact is not to be disguised, that in this section of the country we are again visited with the *Potato Rot*—not in a mild and modified form, but in all its former strength and destructiveness. In the latter part of July, in digging early potatoes, we noticed what we considered unmistakable signs of this disease. We had then heard no complaints on the subject. During August, we examined the potato fields in all this section, and saw, we thought, evidences of the onward march of the destroyer. About the 20th of this month, we wrote a short note on the subject, which appeared in the September number of the FARMER. It was simply this: "*Unless we very much mistake the signs, we are again to be troubled with the Potato Rot.*"

The subject soon attracted the attention of the newspapers, and, as a consequence, the price went up in the New York market. The city editors, however, assured their readers that it was all a humbug got up by speculators; and prices again declined. We have no interest in raising or lowering the price of potatoes, but we say, advisedly, not two-thirds of a crop will be saved in this section of the country, and we should not be surprized if the loss was far more serious. Potatoes here are now about thirty cents per bushel. Farmers are digging those most affected, and are rushing them into market. Those who have sound potatoes had better keep them a time, until they see the effects of the disease.

The following article by W. S. PURDY, of Bradford, Steuben Co., N. Y., we find in the *Rural New Yorker* of September 22d:

"The potato rot is making fearful ravages in this locality. At least one-fourth of the crop is already destroyed. As a preventive, I am decidedly of the opinion that your correspondent, AMERY WILSON, of Marcellus, is correct in recommending early digging and thorough drying in the sun. The first experience I had with the disease was in the fall of 1844. It commenced in about the same manner as this year. I dug my potatoes the middle of September. They were about one-fourth rotten in the hill. I let them dry in the sun, and drew them to the barn and spread them upon the floor 18 to 20 inches deep; opened the large doors every morning and closed them every evening, and every day or two gave them a thorough stirring. The result was, not a potato commenced rotting after digging. They were kept in the barn until the cold weather compelled me to remove them to the cellar. I then put them in bins, elevated about six inches from the bottom of the cellar, and I never had finer potatoes, or had them kept better. My barn faced to the south, and the sun shone in upon them four or five hours every clear day. A great many of them became green, and consequently I supposed they were strong and unfit for eating, but to my surprise after they had been in the cellar a few days, the green ones were as sweet and palatable as the others, and some who used them thought them more so.

"My neighbor, whose field of potatoes was only separated from mine by the road, allowed his to remain in the ground for nearly four weeks after mine were dug. He then dug his and put them immediately in the cellar, and buried them. The result was that by the first of January, his potatoes were all rotten, and he had to depend upon me for potatoes for table use and for seeding in the spring.

"I have pursued a similar course to that above described whenever I have observed the rot among my potatoes, and with the like result. I called on a friend yesterday in the town of Orange, the next town east of this in Schuyler county, and found him digging his potatoes. His common or mixed variety were about one-fourth rotten. He had two rows of a new variety called the Bermuda potato, introduced in this region by the Hon. A. B. DICKINSON. There were about one in twenty rotten. He had two rows of a variety that were propagated from the ball or seed six years ago by RUFUS DOW, of the same town. They yield about one-third more than either of the others, and are very fine looking potatoes—not a rotten one among them."

TO MARK SHEEP, WITHOUT INJURY TO THE WOOL.—To thirty spoonfuls of linseed oil, add two ounces of litharge and one ounce of lamp-black: unite them together by boiling, and mark the sheep therewith.

CHANGES IN FARMING—THOUGHTS FOR FARMERS.

The general advance in the price of agricultural products, the facilities afforded for shipping produce to market by railroads in almost every corner of our country, make important changes necessary in the character of our farming. With wheat at five or six shillings a bushel, and twenty miles to draw it over a bad road to market, the farmer can not afford to buy guano to increase his crops; nor can he afford to employ much expensive labor, even though he thereby secures a large yield. He can, however, afford to keep his land in good condition by a proper rotation of crops, and a judicious and inexpensive system of manuring; for when produce is so cheap, raising cattle is generally profitable.

When corn, oats, and potatoes, range from one to two shillings per bushel, and hay three or four dollars a ton, it will not pay to expend much labor in hoeing root crops, or in purchasing superphosphate for the turnip.

But when wheat is worth from twelve to twenty shillings, farming becomes an entirely different matter. The great object then is to increase the crop, and it will pay to do so. It will pay to hoe and weed, and to manure with guano, if a cheaper home-made manure can not be obtained in quantities sufficient to insure a full crop. Then, with corn, and potatoes, and oats, ranging from four to eight shillings a bushel, and hay at from ten to twenty dollars a ton, it will not only pay the farmer well to exert himself to raise largely of these crops, but it will pay him to raise other crops for his own consumption, and thus be enabled to dispose of those that bring a high price. An acre of carrots for horses, parsnips for the pigs, some beets, and turnips, and millet, all of which can be raised in immense quantities on a small piece of land, will enable the farmer to dispose of most of his corn, oats, and hay, and yet leave his stock in full as good condition.

We designed in this article only to give a few hints to the thinking farmer, who will thus, we hope, be enabled to see the necessity of keeping up with the times, and making such changes and improvements as changing circumstances may demand.

How to Preserve Manure.—Put it in heaps, and cover it with earth one foot deep. Never leave manure in the barn yard; put it all, year by year, on your land.

NOTES BY S. W.

It is refreshing to see that old pioneer in agricultural progress, the Genesee Farmer, now under new direction, in the field in all the panoply and renewed experience of the veteran soldier.

A review of the theories and experiments of J. B. Lawes and Justus Von Liebig, contained in the August and September numbers of the Farmer, is one of the best discriminating, analytical, and masterly criticisms, perhaps, that has yet appeared on this side the Atlantic in our agricultural literature. It is the more valuable to the practical farmer, as it recites and explains, in part, the results of seven years' farm experiments, made by Mr. Lawes at Rothamsted, Eng.; experiments conducted in the most thorough manner, by the aid of varied manuring and perfect culture; and what is better, with the sole object of ascertaining the truth as taught in nature's economy, rather than to confirm a cherished theory, preconceived in that pride of science which is too often the besetting weakness of the learned, and as often "foolishness" to the farmer, and a "stumbling block" to the neophyte in the study of agricultural chemistry.

I feel that no man who loves truth for its own sake, can rise from a careful perusal of this criticism, without feeling that the great master of organic chemistry, Baron Liebig, in his late effort to appropriate the results of the Rothamsted experiments to sanction his own long cherished "mineral theory," has strangely garbled the spirit and argument of Mr. Lawes' published report of his long continued farm experiments.

As the reviewer justly remarks, "Mr. Lawes' experiments point to no revolution in our present system of culture—and on this account will be less acceptable to all ultra reformers—but it explains the *rationale* of the most approved systems of the rotation of crops, and general farm management,—confirms what practical farmers have previously but indistinctly perceived, and urges them to carry out still further, and by more economical methods, a system of improved culture they have already commenced."

I confess that the "mineral theory" as first presented in Liebig's most animated and truly rhetorical style, once carried with it to my mind much plausibility; but all subsequent observation and experiment have more and more confirmed me in the belief that a soil is much more productive when treated with a carbonaceous manure, rich in nitrogen; first, for the ammonia it is to afford, then not less for its mechanical amendment to the soil, by which it may

both collect and retain atmospheric plant food, than for the ashes or mineral constituents it leaves in the soil in its final decomposition.

'Tis true that when a soil is completely exhausted by continual cropping, without any return of vegetable refuse to replace the ashes of plants in it, the application of pure ammonia salts would be nugatory, hence why leached wood ashes is such a desideratum on such thoroughly exhausted soils. But I take it that no farmer in Western New York has yet permitted his soil to run so near the starvation point by continued plowing, without a manuring crop of clover turned under by the plow, or its equivalent substitutes, the vegetable refuse of the farm composted with the manure of his stables. And when this is done, we have the authority of the Rothamsted experiments for asserting that nitrogen is the most important ingredient in manures; and that vegetable (carbonaceous) manure enough to supply the necessary ammonia (organized nitrogen) for the maximum vegetable growth, will also contain in its *debris* all the minerals necessary to form the ashes of the plants thus grown, and that the deficiency of carbonic acid necessary to complete the carbon of the vegetable structure, will be supplied by the atmosphere. Because so much less nitrogen is found in the organism of plants than carbon, is no argument against its importance in aiding vegetable structure, as LIEBIG himself no longer gives the palm to potash, as the exclusive solvent of silica, for he readily admits, in his "Relations of Chemistry to Agriculture," that ammonia is a solvent of the phosphates and silicates in the soil, into available plant food; and that this view of the office of ammonia is true, the importance of that highly nitrogenized substance Peruvian guano, deficient as it is in potash, most clearly proves.

The experiments of Mr. LAWES have effectually exploded the theory that plants should be fed with such manures as contain the most of those elements found in the analysis of the same plants; so far from this, wheat, which contains much phosphoric acid, is little benefited by the application of the phosphate of lime, while turnips, beans, peas, &c., which contain little phosphoric acid, are not only benefited, but the crop of turnips may be nearly doubled by its application. Ammonia salts, as contained in stable manure, is the best manure for wheat and the other cereals, and phosphate of lime or bone earth for turnips, &c. As the latter, by their broad leaves and extended foliage, collect their ammonia from the atmosphere, hence their importance as a manurial crop.

But however valuable the Rothamsted experiments are to the English farmer, they can only be followed in these United States by making due allowance for the difference in climate, and varying the crop accordingly. In the cool, moist climate of England, turnips have proved a great boon to English agriculture, correspondent only to the benefit derived from the red clover plant in the hot and dry climate of the United States. While our climate is unsuited to turnip culture on an extended scale, as it is in England, on the other hand, Mr. LAWES tells us that red clover becomes sick, and cannot be kept up as a continuous crop in England, even under the most generous treatment.

In my next I will give the history of the first acclimation of the red clover plant in the United States, and the discovery of the manurial office of gypsum, as applied to the grasses generally, and clover in particular. S. W.

WATERLOO, Sept. 24, 1855.

GRASSES

WE endeavor to answer all questions as promptly as possible. Some of the inquiries made are of such a nature that we can not answer them in the proper department, but have to give a regular article on the subject. In some numbers of the FARMER almost every article is given in answer to letters of inquiry. The present article on grasses will satisfactorily answer several of our friends who have asked information on the subject.

SWEET-SCENTED VERNAL GRASS—ANTHOXANTHUM ODORATUM. (Fig. 1.)

Bontanical or specific character of distinction.—Panicle, spiked, ovate oblong, flowers longer than their awns, on short, partial stalks.

The blossom of this grass is double, the outer one is entirely different from that of any other of the grasses; its outside is covered nearly to the top with stiff brown hairs, lying flat. Stem with two or three short hairs and shining joints. Native of Britain.

Dissections.—1. Calyx or husks; 2. Stamens and anthers, or male parts of the flower or corolla, with the awn and feathered stigma; 3. Feathered stigma on the germ of the seed; 4. Corolla husks, the natural size.

On a brown sandy loam, the produce of this grass, in the beginning of April, is—

	lbs. per acre.
Green food, or grass	3,488
Nutritive matter	96
At the season of flowering the produce of grass is	2,827
When made into hay the produce weighs	2,163
At the time the seed is ripe the produce is—green food	6,125
Or, when made into hay, weighs	1,837
The weight of nutritive matter afforded by this crop is	311

The weight of nutritive matter which is lost, therefore, by taking the crop when the grass is in flower, exceeds one-half of its value, or 188 lbs. per acre.

The proportional value which the grass, at the time the seed is ripe bears to that of the time of flowering, is as 13 to 4 The proportional value which the grass of the lattermath bears to that of the seed crop, is nearly as 13 to 9; and the proportional value or nourishment contained in the autumn grass exceeds that of the first grass of the spring as 9 to 7.

FIG. 1.

The nutritive matter of this grass consists of the following vegetable principles in every 100 parts of the soluble extract, viz:

Mucilage or starch	86
Sugar, or saccharine matter	8
Bitter extractive, or tonic matter	6
	100

The first growth of the herbage in spring affords

Mucilage or starch	80
Sugar	2
Tonic, or bitter extractive matter	18
	100

The tonic, or bitter extractive matter, is here in a larger proportion than in the summer produce, or in that containing the flowering or seed culms, and the quantity of sugar is less. This grass gives the new-mown hay that delightful odor which is peculiar to it. It constitutes a portion of the herbage on pastures on almost every kind of soil, although it attains to perfection on those only that are deep and moist. It thrives best and is most productive and permanent when combined with other species of grasses, and it is therefore a true permanent pasture grass. When sown by itself this grass is not a profitable grass. Mr. GRANT, of Leighton, laid down a field of considerable extent with this grass, and another adjoining field with the meadow foxtail (*Alopecurus pratensis*). A portion of clover seed was sown in each case—white clover with the former, and red clover with the latter grass. Both fields were open at the same time to sheep. The stock gave a decided preference to the meadow foxtail. We saw the trial conducted on a large scale, and every impartiality, by Mr. GRANT, and the conclusions agreed with the results of our own trials—that the sweet-scented vernal is a useful ingredient in pastures on a deep, moist soil, but is unfit to be cultivated by itself.

The superior quantity of nutritive matter contained in the crop at the season of the seed being ripe, instead of at the time of flowering (generally supposed to be the period when grasses contain the most nourishment) is so far a wise provision of bountiful Providence, inasmuch that from the circumstance of this grass flowering in April and May, its crop could not be taken at that period without sacrificing the greater number of different grasses not then in a state of inflorescence; as it is when the seed of the sweet-scented vernal is ripe, the greater number of the superior pasture grasses are in various stages of inflorescence. The season of coming into flower is generally about the middle of April, and the seed is ripe in May, or early in June. The seed is furnished with an awn which ejects it from the husks almost immediately that it is perfected, and this seed is therefore rarely found in what are termed hay seeds, being shed long before the ordinary period of hay harvest.

ROUND-PANICLED COCK'S-FOOT GRASS—DACTYLIS GLOMERATA. (Fig. 2.)

Specific character of distinction.—Panicle distinctly branched, flowers in dense globular tufts, directed to one side, corolla, somewhat awned, five-ribbed, taper-pointed. Native of Britain.

Dissections.—Fig. 1. Spikelet magnified; 2. Floret magnified; 1. Nectary natural size.

On a rich, sandy loam, the produce of this grass, about the middle of April, is—

	lbs. per acre.
Herbage or green food	10,209
Nutritive matter	1,182
At the time of flowering the produce is grass or green food	27,904
Or, hay	11,859
Nutritive matter ditto	1,089
At the time the seed is ripe the produce of grass is	26,544
Or when made into hay	13,272
Nutritive matter ditto	1,451

The weight of nutritive matter in which the crop at the time the seed is ripe exceeds that of the flowering crop is as seven to five nearly.

The seed of cock's-foot is light, and the culms are

comparatively succulent at this period of growth, which will account for the nutritive matter being then in a larger proportion. It should be observed, also, that the crop at the period of flowering is more succulent, and consequently more grateful to stock than the former, which circumstance counterbalances the value of the extra quantity of nutritive matter, and decides in favor of the period of flowering as the most proper to take the crop for hay. The fact of nutritive matter being abundant in the seed crop will not be lost sight of in disposing of the culm, by those who save the seed of the cock's foot.

FIG. 2.

The produce of lattermath is—

	lbs. per acre.
Herbage	11,910
Nutritive matter in ditto	281

The proportional value which lattermath of cock's foot grass bears to that at the time of flowering varies from five to three, and seven to two, according to the circumstances of soil and season.

This is one of the most valuable of the grasses. It springs very quickly after being cropped, and continues productive, with little interruption, throughout the season. Like every other of the more valuable pasture grasses, it will not when sown by itself form a close sward, but becomes tufty. When sown in certain proportions according to the soil, in combination with others, it is a very profitable plant. It requires to be depastured closely, under every circumstance, to reap the full advantage of its great merits. In the pastures most celebrated for fattening and keeping the largest quantity of stock in Devonshire, Lincolnshire, and in Aylesbury, England, which we minutely and carefully examined, we found cock's-foot in every instance to constitute a portion of the herbage. In the most skillfully managed of these pastures, the foliage or herbage of the cock's-foot was to be distinguished only by an experienced eye from that of the *Alopecurus pratensis, Poa pratensis, Poa trivialis, Lolium Perenne, Cynosurus cristatus* and other fine-leaved grasses; a fact which proves the futility of the objections that have been raised without due consideration against cock's-foot, as to its being a *coarse* grass. It wants only to be combined with others in due proportion to the nature of the soil, and judiciously depastured, to render it equal if not superior in value to any of the superior or essential pasture grasses.

The cock's-foot flowers from June till August, ripens its seed in July, or, if the herbage of spring is eaten down to a late period, the seed does not ripen until August, or even the beginning of September. The late Mr. ROGERS PARKER, of Munden, Herts, was the first who collected the seed in any considerable bulk for farm practice, which was afterwards extended and brought into more general notice by Mr. COKE, of Norfolk, Eng.

MEADOW FOXTAIL GRASS—ALOPECURUS PRATENSIS. (Fig. 3.)

Specific character of distinction.—Stem erect, smooth; spike somewhat panicled; husks or glumes of the calyx acute; hairy and connected at the base; shorter than the awn of the corolla. A native of Britain.

Dissections.—Fig. 1. Calyx and floret magnified; 2. Anthers; 3. Style and germen magnified; 4 and 5. Style and germen natural size.

The produce of this grass, about the middle of April, from a clayey loam free from stagnant moisture, is—

	lbs. per acre.
Green food	9,528
Affording nutritive matter	483
At the time of flowering—herbage	20,418
Dried, or hay, ditto	6,125
Affording nutritive matter	478
At the time the seed is ripe—herbage	12,931
Dried, or made into hay	5,819
Affording nutritive matter	454

The culms of the meadow foxtail grass continue succulent long after the seed is ripe; hence it is that the culms of the flowering crop contain proportionally more water and less solid nutritive matter than the grass or herbage at the time the seed is ripe; a wise provision of bountiful Providence in the natural economy of the essential permanent pasture grasses, by which the herbage of this and other early flowering grasses increases in nutritive properties until the seed is ripe, and by the time the general summer

grasses are in flower, (the period of growth at which these are most nutritive), the whole or all the essential species approximate to a state of perfection as to their value for hay, containing at this period less water and proportionally more solid nutritive matter. Did these early flowering grasses afford more nutritive food at their period of inflorescence, (as is a general property of the summer, or commonly, but erroneously, called *hay grasses*), then in that case their value would be greatly reduced, inasmuch as the seeds ripen at an early season; and were the

FIG. 3.

culms to be reduced to nutritive properties by the ripening of the seeds, all that portion of the hay composed of these early grasses would be of an inferior quality, but which in fact is just the reverse. The seeds of these more valuable early flowering essential perennial grasses are light and often defective; a circumstance which detracts from their otherwise great value, because of the less facility afforded to their cultivation in the increased expense of saving or collecting their seeds.

For soils of an intermediate quality as to moisture and dryness, the meadow foxtail is one of the most valuable grasses for early growth, produce, and nutritive properties. In all the pastures most celebrated for fattening in England, this grass constitutes a large proportion, and is found to be closely cropped by the stock. There the foxtail flowers in April, May, and in the beginning of June, and ripens the seed in June or July, according to the season of flowering, which depends on the nature of the soil, the weather, and the site of the pasture.

ROUGH-STALKED MEADOW GRASS—POA TRIVIALIS. (Fig. 4.)

FIG. 4.

Specific character of distinction.—Panicle rather spreading; spikelets three-flowered; floret lanceolate, five-ribbed, connected by a web; stipula oblong; stem and leaves roughish; root fibrous.

Note.—The sharp-pointed sheath-scale of this species of *Poa* distinguishes it with the greatest certainty from the *Poa pratensis*, with which it is often confounded.

Dissections.—1. Spikelet of three flowers; 2 Calyx magnified; 3. Corolla; 4. Germen and feathered stigma.

When cultivated on a brown loam with manure, the produce of grass or green food is—

	lbs. per acre.
About the middle or latter end of June when the grass is in flower	7,486
Dried into hay	2,246
Nutritive matter in ditto	233
When the seed is ripe the produce is—grass or green food	7,827
Made into hay	3,522
Nutritive matter in ditto	336
The lattermath produce is—grass	4,704
Nutritive matter in ditto	223

The superior produce of this meadow grass, its highly nutritive properties, the peculiar seasons in which it arrives at perfection, and the marked partiality which oxen, horses, and sheep have for it in pastures, are merits which distinguish it as one of the richest grasses for depasturing, on soils of a rich, moist nature. On soils, however, of light, sandy, and dry properties, it is of no value; the leaves become shrivelled up, the produce is not touched by the stock, and unless the culms happen to perfect seed, the roots perish under such circumstances. It has, in the course of these remarks, been already mentioned that all the essential permanent pasture grasses grow more luxuriantly and continue longer in the soil as individual plants, when they are combined with other species of the valuable grasses. It is the case with the present grass. There are no pastures in England celebrated for fattening properties or dairy produce, but contain a portion of this grass. The nature of the soil, as to whether it be inclined to moisture or to dryness, will determine the quantity of seed to be sown per acre in combination with others. This is a most valuable ingredient for water meadows. It is one of the grasses so highly spoken of in regard to the large produce of the Orcheston meadow in Wiltshire. WORLRIDGE, who wrote in 1681, observes, "that at Maddington, in Wiltshire, about nine miles from Salisbury, grows a grass, *Poa trivialis, et Agrostis stolonifera var. latifolia*, 'which grass in some years grows to a prodigious length, sometimes twenty-four feet long.' The seed is ripe about the middle of July."

AMERICAN IMPLEMENTS IN FRANCE.

TRIAL OF REAPING AND THRASHING MACHINES AT THE WORLD'S FAIR IN PARIS.

A FEW weeks since we received from Paris, by mail, a very good looking sheet, printed in English, called "*The American.*" It is dated August 4th, Vol. 1, No. 36. It appears to be devoted to American interests at the great Exhibition. We notice a list of Americans in Paris, from which it appears there are thirty-five American gentlemen and seven ladies in Paris. The great contest, as it was called, between English and American Reapers, took place on Thursday, August the 20th. The struggle, however, after all, was between the different American Reapers, as the English machines appeared to be entirely distanced. The following account of the trial we cut from "*The American:*"

"The great battle is fought: BROTHER JONATHAN has beaten JOHN BULL. The question between England and America, which has the best Reaper, is finally settled: America has gained the laurels.

"Thursday, August 2d, the International Jury of the Universal Exhibition, undertook the trial of the various Reapers exhibited. Eight machines entered the field of battle. A piece of oats was laid out in lots of eighteen to twenty-two ares, which were assigned to the different combatants. Three machines were tried at one time, so as to give the Jurors sufficient leasure to examine the work, and to ascertain the speed of each.

"A little one horse Reaper; a Bell machine, constructed in France, and MR. WRIGHT'S automaton or self raking machine, started at the beat of the drum. The American soon ran ahead of the others, did good work, and cut 17.33 ares in twenty-three minutes.

"The machine was worked only with one hand, and the automaton did the raking beautifully. The mechanical arrangement of this automaton, independent of its other merits, entitles it to the high consideration of the Jury.

"Bell's Reaper required the most time, even the little Frenchman with a horse, not cutting more than a yard at a time, beat the great English grain harvester. Two men were engaged besides the driver to steer, and yet the work was not what a farmer would call good and clean.

"After the Jurors had noted their verdict, the next three machines made ready, and at the given signal started; a curious little French one horse Reaper, Manney's Mower and Reaper, and Croskill's Bell machine.

"Manney did not loose a second's time; he started beautifully, and down came the oats in showers. The machine not being well balanced, cut crooked rows, and the discharge board forming an inclined plane, made the delivery difficult and less regular than binders would like. The machine worked heavily, and the two large Normandy horses did their utmost to cut the allotted piece of 19.00 ares in twenty minutes. The work, compared with its competitors, was declared superior, and MANNEY would have carried the day, as to time, if the old racer of the New World had not been in the field.

"Incredulous farmers began to be convinced that the Americans understand something about taking off a crop in short order; yet they wanted a still more regular cut, a clean field, less loss of grain, and nicer fixed sheaves. They criticised Manney's reel deservingly, beating the grain too hard, and causing considerable loss.

"The third machine was Bell's, of English construction (Croskill.) It was exactly like the other one made in France, and was looked upon with some misgivings. A stout pair of French horses, equal to Liverpool's best Brewers beasts, started the machine with all their power, and drove the formidable engine into the slender oats like an ancient war car into the ranks of the enemy. It only made one round, when something gave way, and there stopped the trial of the second Bell's machine.

"This was the first time that we ever saw a Bell's Reaper in operation. It has two principal objections: in the first place, the horses are placed behind

the machine, requiring an extra man to guide the unwieldy contrivance, (at one time three men were engaged steering the machine,) and affording the horses less chance for their exertion of power; secondly the use of a high clumsy endless apron for side delivery, liable to continual derangement, especially in wet weather or dew. It needs too much gearing to move the apron, making the machine complicated and heavy. It has been demonstrated, to the satisfaction of all, that Bell's Reaper works badly.

"The Englishmen present were satisfied that it could not compete with Brother Jonathan, and its greatest advocates gave up.

"There were yet in the field two machines of great repute: that of Hussey and McCormick. One of McCormick's Mower and Reaper had already operated in the neighborhood, and its perfect work in clover, luzern, sainfoin, meadow grass, oats and rye, was known among the farmers, and much talked of, but many had not seen it work, and therefore a great deal was expected of it.

"Hussey's compact Reaper stood along side, with a number of men ready to clear the track, having no aparatus for side delivery. At last the drum gave the signal, and both started.

"Hussey went on, and the gatherers had to jump and run to keep pace with the fleet horses. McCormick gained an inch on Hussey every second, and when they were half down the field McCormick lead, and in a few minutes it outran and outworked Hussey and all.

"Hussey had 22 ares to cut, for which it required 28 minutes. McCormick's lot measured 19.87, nearly 20 ares, which it cut in 16 minutes and ¾ by the watch. The old racer made more than an are in a minute. But that is the least of its merits. It did more, it worked very easy, and cut as close and regular as could be desired; there was not a straw to be seen on the whole track over which it went; the sheaves were all beautifully ranged in a line with their butt ends nicely together, and as nicely as if done by hand with care. It cuts so perfectly straight that it took the last row at one cut, and made a clean sweep, not leaving a single straw to tell the tale.

"When it came round the last time, and had done its work, three cheers were given by the crowds at both ends of the fields, and every one of the spectators congratulated Mr. McCormick's able agent, Mr. McKenzie, on his undoubted success.

"While all that was going on, Hussey worked up and down with a legion of busy gatherers following the Reaper at a quick step, having a large quantity yet to cut. The poor horses, although young and powerful, driven at a great speed, were completely exhausted. The machine works heavily, it requires too much power to drive its ponderous knife. Having no side delivery, a number of men must immediately remove the grain in order to clear the track for the next cut; the men not having time to make neat work, leave the field strewed with grain. In countries where manual labor is scarce, which is the case everywhere during harvesting, this machine could not be employed at all, except with great loss of grain, being trampled out by the horses.

McCormick won the laurels in cutting grain.

"But the man who also carried the day at the great World's Fair in London, who got the *Council medal* in spite of all opposition; put out his circulars and handbills *Mower and Reaper.* This caused a new challenge. His two countrymen, Manney and Wright, called him into a field of luzern of a doubtful character; the luzern being exceedingly young and thin, and rather difficult to be cut,—but McCormick nobly accepted the challenge. Manney, the principal challenger, seemed to be sure of success; his Mower looked as if it would do the thing beyond a doubt.

"The drum gave the first signal, gensdarmes à cheval galloped up and down to drive the excited spectators into a line, the soldiers levelled their muskets and pushed the curious intruders beyond the field. The Jurors collected together, and down came the drum stick, off went Manney and McCormick.—One cut up and back satified the Jurors that McCormick cut this delicate forage better in every respect than the challengers.

"Wright came up a little later; he worked the machine without the automaton, and cut much better than Manney. We consider it by far a better machine than Manney's."

From the correspondence of the *New York Tribune,* we see that another trial has been held, in which not only was the *American Reaper* successful, but the *American Threshing Machine* (Pitt's, of Buffalo,) did nearly double the work of any of its competitors. Prince Napoleon thought Pitt's machine "frightful to look upon." It wouldn't be a bad idea for the French to get a few of them to thrash the Russians. We copy from the *Tribune:*

"The trial took place at La Trappes, on the farm of M. Dailly, Postmaster General of France, thirty miles from Paris, on a line of Railroad. M. Dailly is a member of the Jury on Agriculture, and placed his farm at the disposal of the Commission for these experiments. The farm is a very extensive and very beautiful one is almost perfectly level over an open space of two miles square, and offered superior advantages for the trial. Several trials had already taken place before the Agricultural Jury and a concourse composed of agricultural schools and the neighboring farmers, in which the American machines, few as they were in number, had carried off all the honors, and had thus created for themselves a reputation which brought spectators to the last trial from a distance of two or three hundred miles; but the Prince Napoleon, the President of the Imperial Commission and President of the International Juries, had not yet seen the agricultural implements of the Exhibition in operation, and he therefore ordered the final trial which had just taken place, and invited to it all the jurymen, commissioners, and other officers of the Exhibition, and a large number of public dignitaries.

"The news soon gained great publicity, and when the day of trial arrived, the railroad company had not made preparations for the transportation of more than half the number of persons who presented themselves. The list of names of distinguished men who

were present occupies half a column of the *Moniteur*. Nine Arab chiefs of distinction, all tall, fine looking men, were present, and took much interest in the experiments. Among the Americans, who were present in considerable numbers, were Mr. FILLMORE, late President of the United States; Mr. CORCORAN, the banker, who attends Mr. FILLMORE in his travels; Mr. TOOMBS, Senator of Georgia; Mr. HARRINGTON, Assistant Secretary of the Treasury under Mr. CORWIN; several members of Congress, and the following jurymen and commissioners from the United States: Mr. FLEISCHMANN, juryman on the seventh class, New York; Col. COXE, juryman on the second class, Alabama; Mr. VALENTINE, commissioner, from Massachusetts; Mr. GILMAN, Connecticut; Mr. LE VERT, Alabama; Hon. Mr. ELLIOTT, South Carolina; Dr. JOHNSTON, Ohio.

"The train which conveyed the Prince NAPOLEON and suite, arrived on the ground at half past ten, and the experiments commenced at once. A whole regiment of soldiers were required to maintain the lines around the fields where the experiments were made, and no one was permitted to enter the field to follow closely the experiments, but the Prince and the Jurymen and Commissioners. The programme embraced what is in France the entire series of agricultural operations. Drainage, tillage, diverse preparations of ground, threshing, sowing, weeding, reaping, mowing, and hay scattering and gathering. A large number of implements were on the ground for the minor operations, and in these the English carried off at least two-thirds of the honors against all the rest on the ground. But the greater interest of the occasion attached to the Reapers, Mowers and Threshers, and in these contests the American machines were so far superior to all others, that the struggle was confined to themselves. There were in fact but four machines of any kind on the ground manufactured in the United States, and these were the Reapers and Mowers of MCCORMICK, MANNY, and WRIGHT, and the Threshing machine of PITTS, of Buffalo.

"The Threshers were tried before the Mowers and Reapers. Six men were set to threshing with flails at the same moment that the different machines commenced operations, and the following were the results of half an hour's work: [36 Fr. litres make 1 bushel.]

Six threshers with flails,	60	litres of	wheat.
Pitts' American Thresher,	740	"	"
Clayton's English Thresher,	410	"	"
Dunoir's French Thresher,	250	"	"
Pinet's Belgian Thresher,	150	"	"

"In regard to PITTS' machine, the *Moniteur* says: 'PITTS' machine has therefore gained the honors of the day. This machine literally devours the sheaves of wheat; the eye can not follow the work which is effected between the entrance of the sheaves and the end of the operation. It is one of the greatest results which it is possible to obtain. The impression which this spectacle produced upon the Arab Chiefs was profound.'

"The *Moniteur* might have added that the effect was no less wonderful to the Prince NAPOLEON, who returned twice to the machine, and declared that it was 'frightful to look at!' as it must have been to all those who never before saw a genuine, fast American thresher.

"The machine of Dunior is used almost exclusively in France, but already the demand for the Buffalo machine is so great that without doubt it will supercede all others.

"After partaking of a bountiful breakfast, which was offered to the Prince and the Jurymen by the Perfect of the Department and the owner of the farm, all parties repaired to the field of wheat, where the Reapers were already in place, awaiting the company and the roll of the drum to start off. The reaping was the great feature of the day, and so great were the crowd and the excitement, that the soldiers found themselves unable to maintain perfectly the lines which were formed around the field. There were seven Reapers on the ground—three American, two English, and two French—but all more or less modifications of McCormick's original invention; and the field had been divided into seven equal portions, each portion containing, as well as my unpracticed eye could estimate, slightly more than an are of wheat. The wheat stood heavy on the ground, and was at least one-fourth fallen. At the tap of the drum the machines all started off together, McCormick's rapidly taking the lead, a position which it maintained to the end, performing its task in ten minutes and a third. Manney came out in sixteen minutes, and Wright in eighteen minutes.

The others varied in their time from half an hour to an hour and a half—but I believe an English machine, which did not work well from the start, left the field without finishing its task. After the three American machines the first one out was Coernier's (French) machine, which was drawn by one horse, and which was much admired for the beauty and regularity of its movements.

"The excitement during the trial could only be compared to an animated horse race. The Americans were collected principally in the neighborhood of the McCormick machine, and at each turn cheered on MCKENZIE, the able agent who conducted it. In this group the fine form of Mr. FILLMORE, who had climbed on to a shock of fallen wheat, was conspicuous, and he was as excited for the success of American genius as any man on the ground. The machine of MCCORMICK had never, within the knowledge of MCKENZIE, cut so fast as on that occasion. The machine was drawn by two large horses, that accomplished the whole distance at a pace half walk, half trot, which would have done four miles and a half to the hour. MCKENZIE was nearly exhausted when the task was finished, and declared he could not have gone another half round. To see his long, brawny arms swinging in unison with the blades of the machine as he raked to one side the great mass of falling grain, was an exciting spectacle to all who saw it, and one not easily forgotten. At the end of the performance he was loudly cheered, and the crowd following Prince NAPOLEON, the Arabs, and the Jurymen, and regardless of the soldiers who threatened to use their bayonets but did not, rushed to the middle of the field to examine the conquering machine. The Prince, the Arabs, the Jurymen, and the Americans crowded around the modest MCKENZIE, and complimented him warmly for the great feat which he had just performed, and the conductor placing French and American flags on the machine, it was escorted from

the field in the midst of a dense crowd of admiring people.

"These seven Reaping machines were then adjusted for grass and put into a field of luzerne—a kind of grass which resembles clover in appearance, and is very valuable for feeding purposes. Here again the three American machines came out first, McKENZIE in the lead. The performance in grass, however, was not so perfect as could have been desired, from the fact that the machines for scattering and gathering were allowed to start in immediately after the mowers, and thus created confusion and imperfection of work, by throwing the cut on to the uncut grass.—The mowers were thus choked and make to skip. In the gatherers and scatterers, the English machines held the superiority.

"Thus terminated a day which has added great luster to American inventive genius, and it is gratifying to know that the championship on the occasion was frankly and cordially acknowledged. There were other inventions for reaping at the Exhibition, and great boasting had been made about the vast superiority over all others of a recent French invention, but after the American machines were first seen in motion, only four inventors of those first represented at the Exhibition, were found bold enough to enter into competition, and these are now so completely vanquished that their patents will possess no value."

The results of this trial is of course a great satisfaction to every American, and justifies us in making so full a record of the trial in all its particulars. Ten years hence many of our readers will re-peruse this article with pleasure and pride. Still, we have no cause for vain exultation. While England furnishes us with our improved stock, and give us the results of such invaluable agricultural experiments, it is only right that we should do something worthy of a great nation, to advance the cause of agriculture throughout the world. Peace as well as war has her triumphs. We are happy in recording this peaceful triumph.

COTTAGE BUILDING, WARMING, &c.

WILL you give us a plan or two of the cheapest kind of a cottage, suitable for a gardener or for a man of very small means to build—plain and cheap, yet neat and appropriate? Do you think furnaces for heating houses healthy? Is there much economy in using them? Would you advise the use of wood or coal in a furnace, supposing the cost to be about the same? Is heating a house by hot water pipes a good plan?

All these questions are asked by a correspondent, in one letter. It has been said, and very truly, that a fool can ask question that a wise man can not answer. Without for a moment thinking ourselves very wise, or our correspondent very foolish, we shall answer these questions to the best of our ability. We will commence at the bottom and work up.

Heating a House by Hot Water, is an excellent plan. Nothing can be more safe or less injurious to health. We think it, however, a costly method.—Putting in the necessary iron pipes is quite expensive, and we think the amount of heat obtained from a given amount of fuel will be less, than by stoves or a furnace. On this point, however, we have no positive evidence, and where persons have money enough and to spare, it is a matter of no consequence.

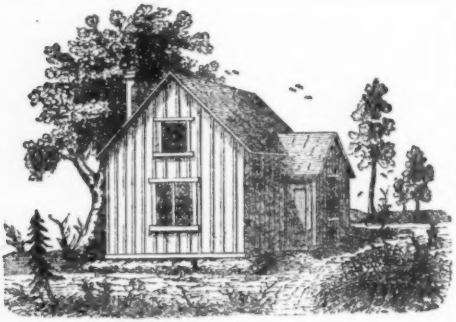
We would advise the use of coal in a furnace, as being less trouble. A furnace for burning wood requires an almost constantattendant.

So far as the saving of coal is concerned, there is no economy in using a furnace. Burning coal in a good stove is the way to get the most heat for your money. In using a furnace a great deal more heat is used than in using stoves—for instance, a friend calls—you turn the register in your library, and in five minutes you have a warm room where you can retire. Some lady friends make a call on your wife, and in five minutes the parlor is warm. If in either case a fire had to be made in a stove, the visitors would have remained in the reception room. With a furnace you have no ashes or charcoal dust or smoke about the house. Coal, ashes, and every thing pertaining to the fire, is in the cellar. There is something saved in this way.

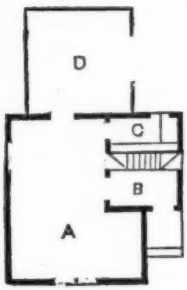
We do not see why a decently constructed furnace should be unhealthy. The air passes from the street through pipes into your room, being warmed in its passage by coming in contact with the heated furnace. If the furnace is only moderately heated, we cannot see how the air is injured, and you thus have a constant fresh supply. If your room is so constructed that the air, as soon as it becomes unfit for breathing, can pass into the chimney, and thus secure a constant change, we cannot imagine a better arrangement for health or comfort. With all our early prejudices in favor of the old-fashioned fire-place and back-log of our early days, we cannot find fault with this arrangement.

Having answered our correspondent thus far, to the best of our ability, and given him deductions from our own experience, we have now only to give "*a plan or two*" of very cheap cottages. In the first place we give one small enough and cheap enough, as here it would cost about $200. The author of this plan gives his own description:

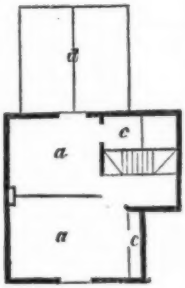
When fatigued by a hard day's labor, I take my seat in the front or parlor end of our room, (A.) and while listening to, and being rested, by the prattle of the wee ones, or talking with a guest, I am under no apprehension of being disturbed by the needful opening of some door; and, looking across the cooking



ELEVATION.



FIRST FLOOR.



SECOND FLOOR.

stove,* see my good wife busied in preparing our evening meal, with the pantry door, door to the wood-house, cellar door, and door side of the stove, all in her own end, where husband, children, and guest are out of her way—I think I have happened to make a pretty large room of 10½ feet in the clear, by 18, to say nothing of the recess, 4½ by 8 feet, where, in an emergency, we can quite conveniently place a bed, though we have two comfortable bed-rooms (*a a*) up stairs, 9 by 10½, and 9 by 13 feet, with closets, where the bed-places are not against doors or windows.

Our entry (B) is only 3 feet 9 inches by 8 feet 2, but it does very well to hang overcoats and hats, and save wife and children from the cold blast of an open door in a stormy day. The pantry (C) is of the same size; but having shelves 14 inches wide running the whole length of the right-hand side, and a broad shelf across the end to roll the doughnuts on, with its little flour and meal bins underneath, we think it very convenient. Our wood-house (D) is 12 feet square, and 8 high; *d*, in the chamber plan, represents the roof of it. I mean, in the spring, to put in it a cistern close to the wall, and cover it with rough boards, which extend over one-half the area of the wood-house, which, with the addition of a sink and pump, will make us a good summer kitchen.

Now, Messrs. Editors, when I take an outside look at our cottage, I can not help thinking that the proportions, 16 by 19, with 12 feet posts, and its brave little rectangular roof, (it looks steeper, more gothic, in the house itself, than in the drawing; I don't know why, the proportions are the same,) its little addition for hall and pantry of 10 feet 8 inches, by 4 feet, 10 feet posts, with its gable end, are pretty fair. And though it is built of rough, upright planks, battened, (it is battened also on the inside, and the laths nailed to the battens;) yet, with its terraced foundation, its projecting water-table, its perfectly plain though somewhat prominent cornice, and its tessillated windows, with their rough casings, as well as the cornice battens and water-table, lime-washed a slightly lighter stone-color than the planks, the effect is to me rather pleasing. And when we get our little Chinese veranda, 4 by 4 — built on the foundation for it, which you see I have marked on the ground plan—to shelter the front door, and our fruit trees shall have grown, by-the-by, please ask your engraver to anticipate a few of them, for I can't draw trees,) we think the *tout ensemble* will be quite an advance upon the Yankee-cheap architecture that we see every where about us. G. S. G.

* The stove is placed directly under the chimney, which is built from the chamber floor.

The next plan we will give is one of Downing's designs. It would cost about $400 in Rochester:

This simple design is given to show how a very small cottage, built of wood, may be made to look well at a very trifling cost. In form, it is a mere parallelogram, and while it is devoid of a very strongly marked architectural character, it combines something of home-like or domestic expression.

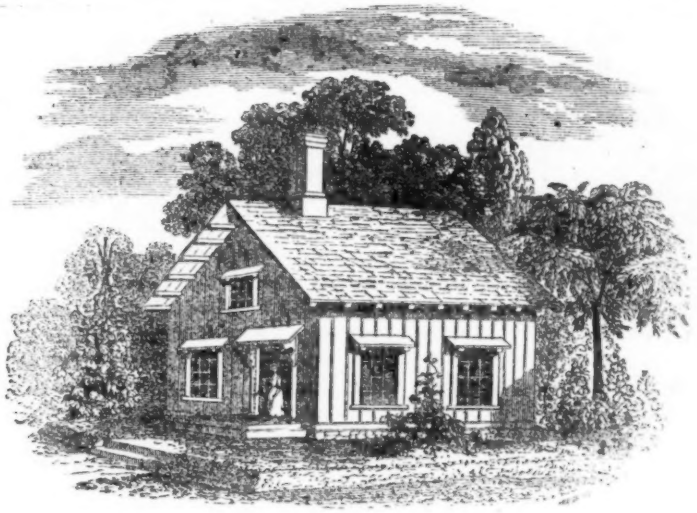
The picturesque character is partly owing to the bold shadows thrown by the projecting roof, and partly to rafter brackets and window hoods.

Let any one imagine this little cottage, with its roof cut off close to the eves, with the rafter brackets that support the projecting eaves omitted, with the windows and door mere bare frames, and he has an example of how this same cottage would look as we commonly see it built; that is to say, without the picturesqueness of wood clearly expressed by using it *boldly* (not neatly and carefully;) by a sense of something beyond mere utility, evinced in the pains taken to extend the roof more than is absolutely needful; and by raising the character of the windows and doors by placing hoods over their tops.

Accommodation.—The single apartment called the *living-room*, 12 by 18 feet, is the common apartment, the kitchen, sitting-room, and parlor of this family; for it is intended for a family which "takes care of itself."

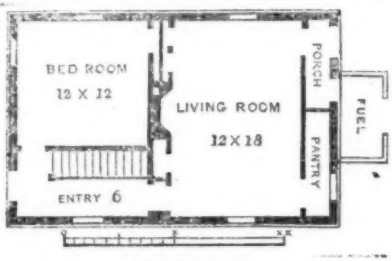
Opening the front door of this cottage, we see an entry six feet wide, which contains the stairs to the second floor. Underneath this stairs, another flight descends to the cellar.

On the left of the entry is a small bed-room twelve feet square. If this bed-room is used constantly, it would be better to have it communicate with the living-room by the door on the left of the chimney flue, which is now the closet door; and the arrangement, supposing this bed-room in constant use, will give greater convenience and greater warmth in winter, since one fire will keep both rooms warm.—If, on the contrary, it is only to be used occasionally,



DESIGN FOR A SMALL COTTAGE.

it would be better not to make it communicate. Indeed, with a little nicety of construction, there is space enough to retain a small closet for the living-room, and still have these two rooms connected.



GROUND PLAN.

The living-room is 12 by 18 feet, a convenient size for daily use. It is lighted by a window on each side, and the chimney being nearly in the centre of the house, no heat will be lost in the winter. Near one corner of the opposite side of this room is a door opening into a small pantry which is lighted by a window, and at the opposite corner is another door opening into a narrow porch. We have cut off the passage to form this small porch, in order to protect the back door, which opens into the main apartment of the family, from sudden draughts and cold blasts, a point most important in a northern climate, but too often neglected, to the serious discomfort of the inmates of small cottages. From this back porch another door will be seen opening into a small wood-house, so that fuel may be had without going into the open air. This wood-house is represented of small size, but it may be extended in depth several feet, if more room is wanted.

The second floor of this cottage contains two good sleeping rooms, and two large closets. There are no fire-places, but openings are left for stove-pipes in the flues, so that one or both rooms can be warmed.

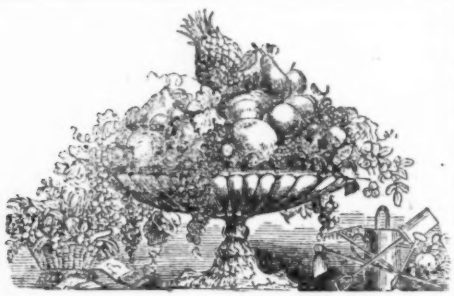
There is a cellar under this cottage, and the outer cellar door should be provided just beneath the pantry window, if no more convenient position is found for it.

Cottages of this size usually have the stairs placed in the living-room, while the front door opens directly into one of the apartments. We think, in this respect, our plan has much greater comfort and convenience to recommend it.

Construction.—This cottage is to be built of wood, and the weather-boarding is to be put on in the *vertical manner*, with battens nailed over the joints.

In many parts of the country, where lumber planed by machinery is not easily obtained, we would use inch boards rough, or without planing, and put them on with square edges (not matched.) The batten completely covers the joint. This will cheapen the cottage considerably, if planing is to be done by hand; and for all outbuildings and cheap cottages, rough boarding, either painted and sanded, or washed over by the cottager himself with a cheap wash,* produces an effect even more satisfactory to the eye, because more rustic and picturesque than planed boards.

* Cheap Wash for Cottages of Wood.—Take a clean barrel that will hold water. Put in it half a bushel of fresh quick-lime, and slake it by pouring over it boiling water sufficient to cover it four or five inches deep, and stirring it till slaked. When quite slaked, dissolve in water and add 2 lbs. of sulphate of zinc (white vitriol) which in a few weeks will cause the white-wash to harden on the wood work. Add sufficient water to bring it to the consistency of thick white-wash. To make the above wash a pleasing cream color, add 4 lbs. of yellow ochre. For a fawn color, take 4 lbs. umber, 1 lb. Indian red, and ½ lb. lampblack. (Lampblack, when mixed with water colors, should first be thoroughly dissolved in alcohol.) To make the wash grey or stone color, add 1 lb. raw umber and 2 lbs. lampblack. The color may be put on with a white-wash brush.



Horticultural Department.

FRUIT GROWERS' SOCIETY OF WESTERN N. YORK.

This body held its first meeting since its organization, in the Council Chamber at Buffalo, on the 13th and 14th of September. Below we give an account of its proceedings. About seventy-five members were present, all of whom manifested much interest in the proceedings of the Society.

There were many and large contributions of fruit by amateurs, fruit growers and nurserymen, from different parts of this portion of the State, as follows:

Contributors.	Number of Varieties.			
	Grapes.	Pears.	Apples.	Plums.
Ellwanger & Barry, Rochester		160	80	25
Hooker, Farley & Co. do.		22		4
A. Frost & Co. do.		64	2	1
J. H. Watts, do.			4	
H. E. Hooker, do.		74	53	
J. J. Thomas, Macedon, Wayne Co.			40	
H. P. Norton, Brockport		33		
W. R. Coppock, Buffalo		32	5	
R. Bullymore, do.	9		7	
L. F. Allen, do.		13	26	7
M. Cadwallader, do.		5	7	
Manley & Mason, do.		80	43	
L. Eaton, do.		28	18	
J. S. Miller, do.		4		2
B. Timmerman, do.		13		2
G. Zimmerman, do.		17	34	2
Dr. Pratt, do.	9	12		4
A. Huydekoper, Meadville, Pa.	6		7	
W. P. Townsend, Lockport		80	10	
Penfield & Burrill, do.		70	16	
C. L. Hoag, do.		26	19	2
A. Pinney, Clarkson, Monroe Co.		13		
Loomis & Whitman, Byron			11	
R. B. Warren, Alabama, N. Y.	1	6		
A. Hampton, Ellicott		1		

The exhibition of fruit was better than we have seen collected together for many a day. The specimens were generally well grown, and correctly named.

We were extremely gratified at the display of fruit, and we must say that this first meeting guaranteed much for the future success of the enterprise, which is for the promotion of horticulture throughout Western New York.

The discussions were very interesting. Much was said upon the stereotyped subject—"the cause of the fire blight upon the pear." There were about as many different opinions as to the cause as there were speakers. It was a tough subject, and no progress was made.

When a tree was attacked, it was generally thought best to amputate the diseased branch some distance below the point where it had extended.

Different persons named sorts of pears which, from their observation, were most subject to blight. We cannot see in what manner this is to be of much benefit. All of the kinds which are there mentioned as being subject to blight are those that are cultivated extensively, while those sorts of which but few are grown are not noticed; yet they may be just as subject to this disease, and in many cases far more so. What kind of a list shall we now make out to plant of pears? Would it be those which are not enumerated? Of those not enumerated, there are not probably ten grown, while of those which are stated as liable to blight there are hundreds.

If an orchardist had an orchard of one hundred pear trees, say of the *Bartlett, White Doyenne, Madeleine, Vicar of Winkfield,* and *Louise Bonne de Jersey,* out of which ten should blight; adjoining these there were ten more trees of another sort which entirely escaped, still this does not show that the *Bartlett, White Doyenne,* etc., are more subject to blight than the kind of ten trees of which none were attacked. To ascertain what sorts of pears are most subject to blight, other means must be adopted. As a general rule, however, we believe that those sorts of pears are more subject to disease whose habits of growth are very luxuriant, as the woody matter of which they are composed is less compact and firm.

On ripening of pears something was said concerning which much is yet to be learned.

To save plums from the ravages of the curculio, allow pigs and poultry to have access to the ground under the trees, as they will destroy the decayed fruit when it drops, and with it the insects that would continue its destruction the following season.

The following are the notes we took at the time:

At 12 o'clock, John J. Thomas, the President of the Society, called the meeting to order.

The following business committee were appointed: Barry, of Rochester; Allen and Coppock, of Buffalo; Burrill, of Lockport; and Pinney, of Brockport.

The Convention then adjourned.

At 3 o'clock the Convention re-assembled, and Mr. Barry, from the Committee on Business, re-

ported that the diseases of fruit trees should be discussed in the following order:

1st, Fire blight in Pear, Apple, and Quince trees. 2d, Leaf blight in same trees. 3d, Cracking of the fruit. 4th, Black knot on Plums. 5th, Mildew on early Grapes.

Insects.—1st, Curculio. 2d, Apple borer. 3d, Apple and Pear insects. 4th, Peach borer.

The discussion to be continued till half past five o'clock, and on Friday from half past eight till one.

The subject of Fire Blight was then discussed, in which Messrs. ALLEN, of Black Rock; THOMAS, of Macedon; TOWNSEND and HOAG, of Lockport; COPPOCK and MANLY of Buffalo; BARRY and HOOKER, of Rochester; and others, participated.

Mr. ALLEN did not know much about it. Has an orchard of one thousand pear trees, dwarfs and standards, but has not seen any blight among them till this summer. A number of his trees had been attacked, some killed outright, several of them being *Stevens' Genesee*. He found the disease to increase much more rapidly, and was far more disastrous, during moist hot weather. Then the atmosphere is more or less charged with electricity; hence concluded that the disease was the result of electricity. He showed a blighted limb of pear tree, containing several very fair specimens of fruit nearly ripe, and said that the fruit upon this branch about three weeks ago, when attacked with the blight, was not larger than marbles; and he felt confident, from the dry, withered appearance of the branch, looking as if it had been placed in the fire and burnt, that not the least particle of sap had passed the diseased part since that time, and presumed that the fruit received sustenance from the atmosphere only. Thought by stating this fact, it might prove to be of value.

Mr. THOMAS remarked that his trees had been badly affected. Could not account for the disease, but believed it contagious; and whenever he discovered any symptoms of blight, he invariably amputated the diseased portion, and burnt or buried the parts cut off. Concerning electricity, he had never heard of it being injurious to plants, and knew evil results arising from it only when it was escaping. He thought that the theory of the sap bursting the vessels, which had been assigned as the cause of the blight, and also of the rust in wheat, was hardly plausible. He had made examinations with a most powerful microscope, and from such observations was forced to believe that the rust is occasioned by the growth of fungi. Thought that no pressure of sap would burst the vessels. He wondered that they did not have the blight in many sections heretofore; the atmosphere undoubtedly was equally as destructive then as now. He has noticed in hot moist weather, the blight extend, and much more during sudden changes of the atmosphere, particularly from cold to warm.

Mr. TOWNSEND was sorry to say that he had had considerable experience with the blight, and according to his belief thought it to be a rupture of the inner vessels of the stalk of the tree, caused by a surcharge of sap acted upon by a moist atmosphere, and excessive heat, when the plants were making a rapid growth. The disease was the same as rust in wheat. He could hardly consider the disease infectious, as he had thoroughly tested the matter this season, and was fully convinced there was no reason to give any credence to such an opinion. He had a row of pears, *Glout Morceau* and *Belle Lucrative*, planted alternately. A *Glout Morceau* planted at the end was attacked first, in ten days after the next *Glout Morceau*, and so continued till finally all the *Glout Morceau's* were killed, while the *Belle Lucratives* were untouched. Had a number of trees attacked on the 10th of August last, and lost ninety *Glout Morceau*. Adjoining the row of *Glout Morceau* there were rows of *Beurre Diel*, *Beurre d'Amalis*, some *Passe Colmars*, and lost none; following there are five rows of *Louise Bonne de Jersey*, with a few *Oswego Beurre*, and lost only three *Louise Bonne*. With the *Louise Bonne* the blight always attacked the body. Has standard *White Doyenne* blighted. The disease attacked the body of the tree, forming a circle around it about four inches in diameter, while both above and below this point the trunk and branches were apparently uninjured. Blight was greater during hot moist weather, and had noticed at such stages of the atmosphere that rust in wheat extended itself considerably. His ground is good, and previous to planting was occupied by hoed crops. Soil deep, sandy clay loam, with a sandy clay subsoil.

Mr. COPPOCK has a row of *Bartlett*, *Louise Bonne de Jersey*, *Vicar of Winkfield*, *White Doyenne*, and *Glout Morceau*; six plants of which are blighted, but the *Glout Morceau* has escaped. The disease was so active in these cases, that on one day they were perfectly healthy and twenty-four hours after entirely destroyed.

Mr. HOOKER thought the disease contagious, as he had seen sorts entirely destroyed one after the other. Whenever the blight makes its appearance upon his

trees, he cuts off the limb affected and destroys it at once. Has noticed the disease extend itself at different times during the growing season, but during the month of August it was most fatal. *Passe Colmar* has blighted more than any other sort with him. Some *Vicar of Winkfield* and a few *Glout Morceau*. Thinks that the disease is so intricate, and so far beyond our comprehension, that it is useless to try to ascertain the cause; and believes that fire blight does not destroy more than one to two per cent.

Mr. TOWNSEND, in reply to an inquiry, stated that he had had in his grounds instances of the *frozen sap blight* mentioned by DOWNING.

Mr. BARRY had no theory for the disease. A few years ago they suffered very much from it. Thought it was not a general disease, but, like the yellow fever, confined to certain localities, and was the result of atmospheric action, and could not be accounted for any more than the cholera. The disease seemed to be quite migratory in its habits. He remembered very well when there was not a case in Lockport, in fact did not know what it was; now they have it badly. In Buffalo it is just commencing, while in Rochester none is seen comparatively.

Mr. PRINCE thought that the cells were gorged with sap. Mr. P. thought ten years ago that it was an insect, but has given it up, and believes now that it is caused by the atmosphere, owing to the peculiar state of the sap and the atmosphere at the same time. Thinks that some sorts are more subject to blight than others, and says that such sorts blight worse that possess large sap vessels—say the strong growing varieties.

Mr. HOAG noticed that trees blighted worse while under high cultivation, and during change of the atmosphere from cool to hot moist weather.

Mr. PINNEY purchased one hundred pear trees, equal quantities of *Swan's Orange, Flemish Beauty, Tyson, Madeleine*, and *Glout Morceau;* lost all of the *Swan's Orange* and some *Glout Morceau*.

Mr. MANLY thought that *Glout Morceau* was more affected by blight than any other sort.

Mr. THOMAS suggested, as a means of arriving definitely at the varieties of pears most affected by the blight, that each member should in the morning bring in a list of pears most liable to blight, with a description of the soil in which the trees were grown, and the mode of culture. The meeting then adjourned till 8½ o'clock Friday morning.

The members met at the appointed hour; Mr. L. F. ALLEN in the chair; who read a list of pears most susceptible to blight in the opinion of several of the members.

J. J. THOMAS, Macedon.—*Madeleine, Passe Colmar, Bartlett, Stevens' Genesee, Vicar of Winkfield, Glout Morceau.* Most liable to blight in the order named. Least subject to blight *Seckel.* Soil clayey; sandy and loamy soil; subsoil, clay.

J. FROST, Rochester.—Have had only single specimens killed of any variety, they being *Vicar of Winkfield, Bartlett,* and *Glout Morceau.* Soil, strong sandy loam; clay subsoil.

A. LOOMIS, Byron.—*Van Mons, Vicar of Winkfield, Madeleine, Bartlett.* Soil, sandy loam; gravelly subsoil.

JNO. B. EATON, Buffalo.—*Colmar d'Aremberg, Glout Morceau, Passe Colmar, Seckel, Stevens' Genesee, Bartlett, Duchesse d'Angouleme.* Soil, sandy loam; gravelly subsoil.

A. PINNEY, Clarkson.—*Swan's Orange, Madeleine, Glout Morceau, Stevens' Genesee.* Strong sandy loam; clay subsoil.

C. M. HOOKER, Rochester.—*Glout Morceau, Passe Colmar, Swan's Orange, Madeleine.*

P. BARRY, Rochester.—In the nursery, *Glout Morceau* and *Vicar of Winkfield;* specimen ground, *Glout Morceau*—only four trees out of forty. Light sandy loam; clay subsoil.

C. D. HOAG, Lockport.—*Bartlett, Stevens' Genesee, Madeleine, Julienne, Dix, Dunmore, Seckel, White Doyenne.* Sandy loam; subsoil, clay.

H. E. HOOKER, Rochester.—*Madeleine, Passe Colmar, Summer Bell, Glout Morceau, Swan's Orange, Vicar of Winkfield, Bartlett, Stevens' Genesee, Belle Lucrative, Louise Bonne, Beurre Diel, Easter Beurre, Winter Nelis, Sheldon, White Doyenne,* and *Seckel.* Strong sandy loam.

T. C. MAXWELL, Geneva.—*Glout Morceau* and *Vicar of Winkfield,* in nursery: *Madeleine,* in orchard. Clay and gravelly loam: clay subsoil.

W. R. COPPOCK, Buffalo.—*Bartlett, White Doyenne, Louise Bonne, Vicar of Winkfield, Buffum.* Clay loam, resting on limestone.

E. C. FROST, Catharine, N. Y., has seen no blight in his grounds.

Mr. BARRY said that *Glout Morceau* and *Vicar of Winkfield,* which are very extensively cultivated, would naturally be more susceptible to blight than those which are cultivated in small quantities; therefore these lists were not much criterion to be guided by.

The subject of the cultivation of orchard trees was introduced by Mr. THOMAS, and discussed by Messrs. BARRY, TOWNSEND, THOMAS, HOOKER, and COPPOCK.

who each gave their views of planting, etc.; also, their reasons for trees not living when removed.

Ripening of Pears.—Some prefatory remarks were made by Mr. Coppock.

Mr. Pinney exhibited some very high colored *Bartletts*, picked on the 1st of September, and attributes their being so well ripened to the fact that they were excluded wholly from the light, in boxes; and thought that all autumn and summer pears should be picked from a week to ten days before maturity.

Mr. Barry's views coincided with Mr. Pinney's remarks; and said that if pears are left upon the tree till they commence to color, that much of their flavor is already gone; and has noticed that out of one hundred persons who gather pears, not more than one picks them early enough. As a general rule would say that summer pears ought to be picked ten or twelve days before ripening; other sorts when full grown. Still it was very difficult to give special rules when they ought to be picked, which could only be determined with much experience with the several sorts. Thinks that the temperature ought to be moderate—say fifty or sixty degrees. The winter sorts will ripen best, or continue in season longer, if put in small boxes, say one-half a bushel, and allowed to remain in a rather moist temperature just above the freezing point.

There was something said about the plum, in connection with the curculio. Nothing new was offered, however, to prevent this insect from destroying the fruit. Could recommend nothing better than to destroy the decayed fruit as fast as it fell upon the ground.

Invitations were read from the Genesee Valley and Cincinnati Horticultural Societies, also one from the Ohio Pomological Society. The subject of the time and place of holding the next meeting of the Society was discussed with considerable animation by Messrs. Thomas, Coppock, Barry, Woodes, Townsend and Mason; and, upon motion of the latter gentleman, Rochester was named as the most fitting place.

Mr. Thomas proposed that an evening meeting of the Society be held at Elmira during the time of the State Fair.

Mr. Frost remarked, that arrangements had already been made by the State Society for Pomological meetings on that occasion, and no further action was taken in the matter.

On motion of Mr. Hooker, a vote of thanks was tendered to the Common Council of Buffalo for their kindness in giving them the use of their chamber.

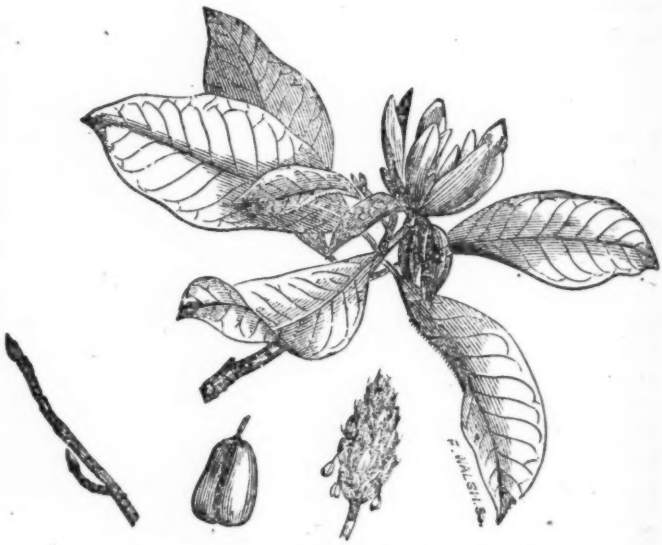
Remarks were made highly complimentary to the exhibition and to the Buffalo members, when the Convention adjourned.

THE MAGNOLIAS.

It is our intention to use the pages of the Farmer to call the attention of tree planters to the beautiful and too much neglected American trees and plants. In our last we gave the beautiful *Yucca*, and now we would ask the attention of our readers to the *Magnolia*.

Among the multitude of trees which are suitable for the embellishment of lawns, the Magnolias are justly entitled to the highest rank. In Europe, whether we look in the little plot of the cottage or the broad parks and pleasure grounds of the nobility, we find them among the rarest, most costly, and most cherished ornaments. Even where the climate will not allow their culture on the lawn, they are still indispensable, and are grown under glass, as we grow camellias. Fortunately the finest of them are natives of our own soil, and several species and varieties, making in all a handsome collection, are so hardy as to flourish in almost every part of the United States. The nurseries of this country, and especially those of Flushing, have for many years propagated and sold vast numbers of the more hardy species, and yet the specimens that we find around the country are few and far between. One great reason is they are exceedingly difficult to transplant. We think we are safe in saying, that for every one hundred that have been planted, not more than ten are in existence. They are difficult to propagate, also. Seeds are always scarce and dear, and it takes several years to make a respectable sized tree. Planters are in the habit of committing a great error in regard to this, as well as many other trees. They are not satisfied to plant young specimens that would involve little risk; they must have them large—large enough to figure at once on the lawn with other trees—and therefore they fail with their magnolias much more frequently than they succeed; and that, too, after they have paid the nurseryman a good round price. We must say candidly, to those who wish to plant successfully, that they must come to this. They must either take small plants, say one or two year transplanted seedlings, of such as are raised from seed, or pay the nurserymen for raising good specimens in pots. From what experience we have, this would be our course. The spirit of impatience must abate before we really set on the right course in regard to planting. The cry has been to a great extent, and is so at present, "we want large trees—trees that will grow up rapidly and produce an immediate effect!" This spirit has filled the country with the coarsest and most unsuitable trees that could possibly be selected for the purpose of embellishment. It has scattered broad-cast abeles and ailanthus, and whatever else promised the greatest amount of shade in the shortest given time. The mistake begins to be felt, and thousands of vain regrets are daily uttered. All manner of hard things are said about the rapid growing trees, and they are threatened with nothing less

than extermination. It should be remembered that they have been merely misapplied. There are situations and circumstances in which the judicious planter may use such trees to advantage. There are bleak exposed situations, where the very first object of the planter is to provide *shelter*, because this is no less indispensable to that comfort which every wise man seeks in his residence, than to the success of his cultivation. In such cases the most rapid growing trees are needed, and it would only be absurd to plant others. But such a plantation would be made on the outskirts of the grounds, and on the principle of utility,—not on the lawn or in the door yard, or wherever it may be desirable and necessary to display taste and beauty.



FRUIT AND FLOWERS OF THE MAGNOLIA TRIPETALA.

Among our hardy American deciduous species of magnolia, the *acuminata* (cucumber tree,) is much the largest; specimens from sixty to eighty feet in

MAGNOLIA TRIPETALA.

height may yet be found in the scattering remains of the forests of New York, and especially southward toward the Alleganies. MICHAUX says:* "It abounds along the whole mountainous tract of the Alleganies to their termination in Georgia, over a distance of nine hundred miles. The situations particularly adapted to its growth are the declivities of mountains, narrow vallies, and the banks of torrents, where the air is constantly moist, and the soil deep and fertile." When this tree is transplanted at an early age to the lawn, where it has abundant space on all sides to assume its natural habits of growth, it throws out side branches near the ground, takes a pyramidal form, and tapers upwards with striking regularity and symmetry. In this way only is its real magnificence developed. Its leaves are large,—and especially where the trees are young and growing in a rich, deep soil,—varying from six to ten inches long and four to six wide. The flowers, which appear in May or June, are three to four inches in diameter, of a bluish purple color on a dull white ground. This tree is usually propagated from seed. The nurserymen who propagate it extensively, sow the seeds in beds of light mellow soil in the open ground. Those who propagate it on a less extensive scale, will find it quite as convenient to sow the seed in a shallow box of light earth. At one year's growth the seedlings may be transplanted into nursery rows. They re-root slowly, and it is not until two years' growth after transplanting that they make a rapid, vigorous growth.

The *Magnolia tripetala*, (three-petaled magnolia, or umbrella tree,) is much smaller than the preceding, and better adapted to planting on a small lawn or limited grounds. MICHAUX regards it as a "connecting link between the larger shrubs and trees of the third order, rarely attaining thirty or thirty-five feet in height, and five or six inches in diameter." The leaves are very large—twelve to twenty inches long, and six to eight broad. The flowers are produced on the points of the branches—very large, some six

* North American Sylva.

to eight inches in diameter, and composed of three large, loose petals. The chief beauty of this species consists in its magnificent foliage, the most tropical like, excepting the *M. macrophylla*, of all our hardy trees. There is also a certain beauty in its large flowers, and in the fruit, which is in the form of a pine cone—five or six inches long, and two or three in diameter. The tree, however, in its form has little elegance, often inclining to one side and throwing up a succession of vigorous shoots from the lower part. A specimen nine or ten years planted, in our grounds, has divided near the ground into three main branches. These divide again further up. The main branches are about three to four inches in diameter, and the whole ten feet high. It has blossomed for several years. It blossoms young, seeds freely, and is usually propagated and managed as described for the *acuminata*.

The *Magnolia macrophylla*, or broad-leaved, is a very striking and beautiful tree, and the rarest of all the deciduous American species. It is distinguished at once from the preceding by its large leaves—which are light green above and glaucous beneath,—its light grayish bark, and silky buds. It is propagated as the two preceding, from seeds; but they are difficult to get.

The *cordata*, or heart-leaved, is also a fine species from Carolina or Georgia, with flowers of a yellowish tinge, produced twice during the season. Hardy in the Middle States.

The *auriculata*, or long-leaved, resembles the *acuminata;* but it does not attain so large a size, and is distinguished by the leaves being distinctly lobed at the base. The flowers are white.

The *conspicua*, or chandelier magnolia, is a beautiful Chinese species, quite hardy in the Middle States, and regarded as one of the most charming of small sized lawn trees. It branches low, and forms a symmetrical half shrub half tree, covered in spring before the leaves, with milk white flowers. One of the finest specimens we have seen in this country, is that on the grounds of the late Mr. Downing. It is propagated from seeds, but more generally by layers which require two years to root; or by grafting or inarching on some plentiful sort.

The *obovata*, or *purpurea*, another Chinese species, is necessarily classed among shrubs, as it seldom attains over ten feet in height, and not often that. It bears its flowers, which are purple on a light ground, before the leaves in the spring, and is at that season highly attractive. It is easier propagated from layers than the *conspicua*, and is therefore usually more plentiful and cheaper in the nurseries.

The *soulangeana*, is a variety produced by crossing the two preceding. It resembles the *conspicua*, but differs in having the flowers tinged with purple. It is a hardy, profuse blooming, beautiful small tree. Propagated generally by grafting or inarching.

The *gracilis* is a slender, erect growing shrub, resembling the *purpurea*, differing particularly in the branches being more erect and slender.

The *glauca*, or swamp laurel, which abounds in New Jersey, and in low, swampy grounds further south, is a very pretty small tree, with glaucous leaves and white, sweet scented flowers. It does not succeed so well in dry exposed places as those previously mentioned, but its great beauty entitles it to some extra care in the way of soil, shade and shelter.

There are many varieties which have sprung up accidentally from seeds, both of the American and Chinese species, but they differ only in some minor points from those described.—*Horticulturist.*

ACACIA DIFFUSA.

Acacia diffusa, Ker.—*Leguminacæ.* (*Paxt. Fl. Gard.*)—A handsome and profuse flowering greenhouse shrub, with balls of bright yellow flowers, which appear in winter, and short, narrow, spine-pointed phyllodes or leaves, at the base of which a small oval gland sometimes (not always) appears. Native of Van Dieman's Land, where it is very common. It differs from *A. siliculæformis* of Cunningham in being altogether much larger, the phyllodes in particular being as large again, and becoming wrinkled when dry or old. (Syn. *A. prostrata, Lodd. in Bot. Cab.*)

BERBERIS PALLIDA.

Berberis pallida, Benth.—*Berberidaceæ.* (*Paxt. Fl. Gard.*)—A beautiful evergreen shrub, growing from five to six feet high, and requiring the shelter of a green-house during winter. The flowers, which appear in early spring, are yellow. In the autumn its large loose panicles of deep purple glaucous acid berries give it a very ornamental appearance. It is very graceful in habit, but its pallid flowers are not produced in great profusion. It is a native of Mexico, where it occurs but sparingly.

Ladies' Department.

SAVING FLOWER SEEDS.

A LITTLE time and attention in saving flower seed in the fall, will save much time and vexation in the spring, and will add much to the beauty of your garden. Save the seeds only of the most beautiful, and thus you will have good reason to hope that the varieties will keep constantly improving. Label every variety, and put away carefully in a dry place. It is quite interesting to look over these packages of seeds of a winter evening, and enjoy in anticipation the beautiful flowers they are to produce, especially if you put on the papers a few remarks as to the quality of the flower. For instance, *"Light Pink Aster*, —this was the most perfect flower I had last season. Seed obtained from G. F., of Rochester." We give below an extract from a delightfully written article on this subject in Putnam's Magazine, entitled *Living in the Country:*

"Mrs. Sparrowgrass," said I, "let us have some nuts and apples and a pitcher of Binghampton cider; we have a good cheerful fire to-night, and why should we not enjoy it?"

When Mrs. Sparrowgrass returned from giving directions about the fruit and cider, she brought with her a square paper box filled with garden seed. To get good garden seed is an important thing in the country. If you depend upon an agricultural warehouse you may be disappointed. The way to do is, to select the best specimens from your own raising; then you are sure they are fresh at least. Mrs. Sparrowgrass opened the box. First she took out a package of seeds, wrapped up in a newspaper—then she took out another package tied up in brown paper—then she drew forth a bundle that was pinned up—then another twisted up—then out came a bursted package of watermelon seeds—then a withered ear of corn—then another package of watermelon seeds from another melon then a handful of split okra pods—then handfuls of beans, peas, squash seeds, melon seeds, cucumber seeds, sweet corn, evergreen corn, and other germs, then another bursted paper of watermelon seeds. There were watermelon seeds enough to keep half the country supplied with this refreshing luxury. As the treasures were spread out on the table, there came over me a feeling that reminded me of Christmas times, when the young ones used to pant down stairs, before dawn, lamp in hand, to see the kingly toy-gifts of Santa Clause. Then the Mental Gardener, taking Anticipation by the hand, went forth into the future garden; the peas sprouted out in round leaves, tomato put forth in aromatic spread; lettuce threw up his slender spoons; beans shouldered their way into the world, like Æneases, with the old beans on their backs; and watermelon and cucumber, in voluptuous play, sported over the beds like truant school-boys.

"Now," said I, "Mrs. Sparrowgrass, let us arrange these in proper order; I will make a chart of the garden on a piece of paper, and put everything down with a date, to be planted in its proper time." Mrs. Sparrowgrass said she thought that an excellent plan. "Yes," I replied, tasting the cider, "we will make a garden to-night on paper, a ground plan, as it were, and plant from that; now, Mrs. S., read off the different packages." Mrs. Sparrowgrass took up a paper and laid it aside. "I think," said she, as the third paper was placed upon the table, "I did not write any names on the seeds, but I believe I can tell them apart; these," said she, "are watermelons." "Very well, what next?" "The next," said Mrs. S., "is either muskmelon or cucumber seed." "My dear," said I, "we want plenty of melons, for the summer, but I do not wish to plant half an acre of pickles by mistake; can't you be sure about the matter?"—Mrs. Sparrowgrass said she could not. "Well, then, lay the paper down and call off the next." "The next are not radishes, I know," said Mrs. S.; "they must be summer cabbages." "Are you sure now, Mrs. Sparrowgrass," said I, getting a little out of temper. Mrs. Sparrowgrass said she was sure of it, because cabbage seed looked exactly like turnip seed. "Did you save turnip seed also," said I. Mrs. Sparrowgrass replied that she had provided some, but they must be in another paper. "Then call off the next; we will plant them for cabbages, whether or no." "Here is a name," said Mrs. Sparrowgrass, brightening up. "Read it," said I, pen in hand.—"Watermelons—not so good," said Mrs. S. "Lay that paper with the rest and proceed." "Corn," said Mrs. Sparrowgrass, with a smile. "Variety?"—"Pop, I am sure." Good, now we begin to see daylight." "Squash," said Mrs. Sparrowgrass. "Winter or summer?" "Both." Lay that paper aside, my dear." "Tomatoes." "Red or yellow?" Mrs. Sparrowgrass said she had pinned up the one and tied up the other, to distinguish, but it was so long ago, she had forgotten which was which. "Never mind," said I, "there is one comfort, they can not bear without showing their colors. Now for the next." Mrs. S. said upon tasting the tomato seed, she was sure they were bell peppers. "Very well, so much gained, we are sure of capsicum. The next." "Beans," said Mrs. Sparrowgrass.

There is one kind of bean, in regard to which I have a prejudice. I allude to the asparagus bean, a sort of long-winded esculent, inclined to be prolific in strings. It does not climb very high on the pole, but crops out in an abudance of pods, usually not shorter than a bill of extras, after a contract; and although interesting as a curious vegetable, still not exactly the bean likely to be highly commended by your city guests, when served up to them at table. When Mrs. Sparrowgrass, in answer to my question, as to the particular species of bean referred to, answered "Limas," I felt relieved at once. "Put the Limas to the right with the sheep, Mrs. S., and as for the rest of the seeds, sweep them into the refuse basket. I will add another stick to the fire, pare an apple for you, and an apple for me, light a cigar, and be comfortable. What is the use of fretting about a few seeds more or less? But, next year, we will mark all the packages with *names*, to prevent mistakes, won't we, Mrs. Sparrowgrass?"

Youth's Department.

FANCY RABBITS.

We think the young should cultivate a fondness for animals and birds. It furnishes *home* amusement. It calls into activity the tender feelings of the human heart. No one who loves even an animal is entirely and hopelessly bad. In our boyish days we started with a pair of rabbits, having expended our last penny in their purchase, and we soon became the wealthy possessor of over a hundred, and all our leisure moments from school were spent in foraging for green food for this great army. We give specimens of two of the most *fancy* varieties, taken from a little book just published by C. M. Saxton, of New York. Its author is C. M. Bement.

Now we do not for a moment suppose that the farmer will raise rabbits for profit, as he would sheep or cows, nor would we recommend such a course. The author says:

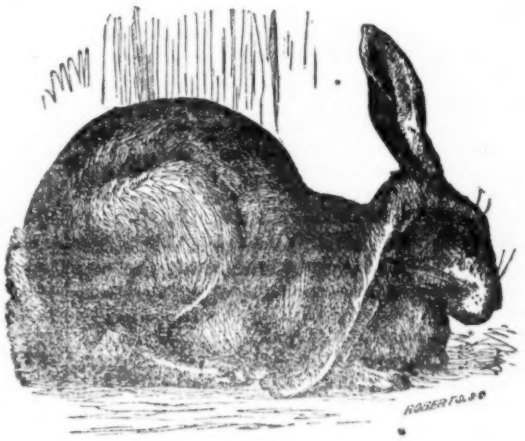
"We are not now going to raise a breeze, a fever, or try to get up an excitement, mania or 'Rabbit Fever,' nor talk of rabbits as economical things, or as a branch of farm stock; but to consider them as an amusement, as a subject of interest, and as a study for the leisure hours of the country, or the village, or city resident either, if opportunity favors their keeping. There is in most persons a natural fondness for animals, but not easily indulged in, without more room than is often to be found in village or city residences. Fowls and pigeons are apt to trespass on our neighbors, and are sometimes the cause of trouble. This objection does not hold good against the rabbit, which occupies so small a space, that where there is an outhouse, there may be a rabbitry.

"In England and other parts of Europe, a love for animals, with the attendance and personal care necessary to their comfort, is encouraged from childhood up, as having a beneficial influence on the character.

"The rabbit in all its varieties, has always been, and still is, a great favorite in many parts of the European continent. 'In Holland,' says a writer in the *American Agriculturist*, 'it is bred with reference to color only, which must be a pure white, with dark ears, feet, legs, and tail; this distribution has a singular effect, but withal a beautiful creature.' In this country and England the favorite rabbit now, is the 'Lop-Eared Rabbit,' originally imported from Madagascar.

"The real value of the rabbit is greater than would appear at first sight. If the flesh is not particularly nutritious, it is a light and wholesome, agreeable article of food, and none but those who have lived in the country, and have received the unexpected visit of friends to dinner, can form an adequate idea of the convenience of having a plump rabbit or two at hand.

"And there is another material value attached to these animals. They afford an early lesson to boys of having live animals to feed and tend. Their proprietorship affords an opportunity of exercising the priceless qualities in after life, of thrift, attentiveness, good management, forbearance, and forethought.



HALF LOP-EARED RABBIT.

LOP-EARED RABBIT.

"Innocent and unfailing amusement is thus derived from the daily practice of prudent habits, which are an excellent preparation for a subsequent charge of greater importance and difficulty."

Editor's Table.

THE GENESEE FARMER FOR 1856.—With the January number of next year, we shall enlarge the GENESEE FARMER so that it will contain at least one-third more matter, and improve it in many ways that it will not be necessary now to mention. The best talent and the most extensive experience the country affords are engaged for its pages. We call upon our friends, therefore, to prepare themselves for a general and zealous effort to increase our already large list of subscribers. The FARMER will be continued at the same low price, and it will be worthy the confidence and support of the farmers of the country. During the last two months we have added largely to our subscription list, and our shelves are almost cleared of back numbers. For this result we are indebted to the disinterested labors of our friends. They have our best thanks.

THE HORTICULTURIST.—Since the present publisher of the GENESEE FARMER sold the *Horticulturist*, we have received, and are now occasionally receiving, letters on the subject, and in others the matter is referred to incidentally. When we purchased the *Horticulturist* of Mr. TUCKER, it had but a little over 2,000 subscribers. We immediately lowered the price from $3 to $2, and gave much better and more expensive plates, and more of them, thus greatly increasing the expense of the publication. To remunerate us, we expected a large increase of subscribers. After laboring two years and a half we succeeded in getting the subscription up to 4,000—it should have been twice that number. With this circulation we found that after paying for paper and printing bills and engraving, and an editor's salary, that but little was left to compensate the publisher for his labors. We had no nursery business, or any other business by which we could make money out of the reputation we gained by its publication, and having received what we considered a fair offer, we sold the work. Mr. SMITH, its present editor, is a gentleman of means and leisure, and edits the work for the love of it. Having, therefore, no editor's salary to pay, we think and hope its present publisher will be sufficiently repaid for all his labor. As the subscription was constantly and steadily increasing, we think the journal will soon be a well-paying establishment. But the first dollar has yet to be made in publishing a Horticultural journal in this country. Mr. TUCKER and Mr. HOVEY will bear us out in this statement.

We have the satisfaction of knowing that while we published the *Horticulturist* it was the best Horticultural journal in the world. Mr. R. P. SMITH, the present publisher, is doing his work well, and should be sustained by the horticulturists of the country.

We make the statement because some erroneous ideas have got out about this matter, designedly or otherwise.

CLUBBING OF CABBAGE ROOTS.—We see much complaint the present season of *clubbing* in the roots of cabbage. By a report made to the London Horticultural Society, we see that *charcoal dust* is recommended as a sure preventive of this disease.

SHOW OF THE GENESEE VALLEY HORTICULTURAL SOCIETY.—The Genesee Valley Horticultural Society held its fall show on Saturday, the 16th of September. This was one of the best exhibitions of Fruit and Flowers ever made in this country. We have not space to particularize, or to enumerate articles, but will say that the show was creditable to the exhibitors and entirely satisfactory to the hundreds who crowded the large and beautiful hall. Mr. HARRIS, of the *Country Gentleman*, was present, being on his way home from Philadelphia, where he had attended the exhibitions of the Philadelphia Society for the promotion of Agriculture and the Philadelphia Horticultural Society. Mr. H. makes the following comparison:

"As compared with Philadelphia, the show of *plants* in *pots* is very meagre, and there are no peaches; but in everything else it is intrinsically far superior to any exhibition I have ever seen. The dahlias, roses, and phloxes are perfectly exquisite, and some idea may be formed of the extent of the show, when it is known that one nursery firm alone exhibited 138 varieties of roses, 70 varieties of dahlias, and 52 varieties of phloxes!! In fruits, Western New York can beat the world, either in quantity or quality; and all that need be said of this exhibition is, that it represents better than at any previous show, the horticultural skill and taste of Rochester and its vicinity. In pears and apples, the exhibition at Philadelphia is not to be compared with this one, either in number or quality. Pears this season are generally smaller than usual, but it is not the case with the specimens exhibited."

At the close of the exhibition Mr. BARRY made some remarks in regard to the extent and importance of the nursery business, and exhorted the members to be prepared for the meeting of the American Pomological Society, which is to meet next fall in this city.

In this connection we must be allowed to remark that we have the means to make an exhibition that shall not only please but surprise those who may attend the meeting of the Pomological Society. What we want is more public spirit and less selfishness. More love of the truly beautiful in nature and less love of money, and less business jealousy. More of soul and less of mammon.

REVIEW OF LIEBIG'S "RELATIONS OF CHEMISTRY TO AGRICULTURE."—A very thorough and able review of this pamphlet has been published in the *Genesee Farmer* for August and September. It lets the moonshine through much of the fog with which art and cunning had enveloped the subject. The American publishers of LIEBIG's work would do the public a service by republishing the review.—*Boston Cultivator.*

The review referred to above, which was published in the August and September numbers of the FARMER, was necessarily so long that we feared it would be objectionable to some of our readers on this account. We are much pleased, however, to learn from the numerous letters we have received and from the demand for extra copies, containing this article, and from notices similar to the above, that it was not only acceptable, but highly prized by our readers and the agricultural press. So great has been the demand for this article that we have determined to reprint it in an extra, copies of which can be had on application by mail or otherwise.

THE RURAL ANNUAL AND HORTICULTURAL DIRECTORY.—We have been unexpectedly delayed in issuing this work. We expect to have all the orders now on hand filled by the 15th of October. We shall say more of this little work, and perhaps give an extract or two in the next number. It is just the book all tree-planters should have. Price, 25 cents, sent to any part of the country free of postage, $2.00 per dozen, $12,50 per hundred, five hundred for $60,00. Send in your orders.

AGRICULTURAL SCHOOLS.—We wish the officers of the several agricultural schools throughout the country would send us immediately a brief statement of their respective institutions. The studies pursued, expense to students, &c. We have several inquiries from young men on this subject that we can not answer. Our friends who are engaged in this good work must not hide their light under a bushel.

"THOU ART THE MAN."—Yes, in pursuing your occupation the present year, if you are an observing and thinking man, you have learned something that the rest of the world don't know. Send us the information, then, and we will spread it far and wide on paper wings. Give us the simple facts, regardless of writing or grammar, and we will dress up your production in a respectable rig, and send it out into the world so good looking that you will be proud to own your offspring.

AN EXPERIMENT IN RAISING BEAN POLES.—A gentleman in Seneca Falls, N. Y., last spring planted some Lima beans. Not being provided with poles, he supplied their place by planting in each hill a sunflower, trimming up the stalk, so that it served the purpose of a pole. For a time all went on well, till at length, the sunflower, growing so much faster than the beans, the latter were absolutely drawn up by the roots. A very easy way of *raising* beans, we should think.

TURNING GRASSHOPPERS TO GOOD ACCOUNT.—The editor of the *California Farmer* gives the following: "In our rides in the grasshopper country, we saw thousands of deep holes which had been dug in the earth by the Indians to entrap their luxurious (?) food. These holes contain about a bushel and a half, and we believe we saw holes enough in Yuba, Butte, and Sutter counties to have collected fifty thousand bushels of grasshoppers. The Indians will grow fat this winter.

"SOME PUMPKINS."—I frequently see in the GENESEE FARMER accounts of remarkable yields, and am induced to offer to add an account of one to the list, if you think it worthy a place in the FARMER. I have just assisted my neighbors, EBER SPICER, J. SPICER, and ENOCH GURNEY, in measuring the product of one pumpkin seed, and found the length of the vine, including its numerous branches, to be 566 feet; with 14 good ripe pumpkins, ranging in weight from 13¼ to 23½ lbs., which grew in the garden of the said EBER SPICER, in Northumberland, near Gansevoorts P. O., Saratoga Co., N. Y. ABNER DEVOL.

PEACHES.—For the first time in many years, our peach crop this year entirely failed, owing to the extreme cold of last winter. It may be readily supposed, then, that a basket of fine peaches was no ordinary treat. Just as we were leaving our sanctum one evening, the express messenger called, with as large and luscious a basket of peaches as we ever beheld. Without knowing the bountiful donor, or perhaps being sufficiently anxious on this point, with the assistance of our friends, we had eaten our way pretty well down, when the following note was revealed to our gaze. It had been all smothered in peaches:

ROCKVILLE, Ohio.

DEAR SIR:—I have sent you a present of a basket of such peaches as I have this year. The red ones are *Old Mixon Clings*, and the yellow ones are *Crawford's Late Melocoton*. Peaches are very plenty this year in the Cincinnati market, and of course very cheap. In general they are very small. I have got up to this time near an average of two dollars per bushel.

JOHN LOUGHEY.

This explained the mystery. Our best thanks, friend LOUGHEY.

THE Sandwich Islands this year will raise wheat enough to supply the Islands, and of a very superior kind. They have got an agricultural society there, from which $600 were paid in provisions, $600 added to sinking fund, and $4,150 were received in one year.

GOOD HORSE PROVENDER.—The best provender that we ever gave to a horse was a mixture of two-thirds oat meal and one-third corn meal. The oat meal has been thought by some physiological chemists to contain much muscle, or flesh-forming matter, and the corn meal to contain much fat-forming material, and therefore, when combined together, we get both principles combined. Our experience with this feed corroborates the above theory.

A writer over the signature of W. W. B., in the *Rural New Yorker* of the 21st, recommends a mixture of oats and rye for horses. We think his plan of raising the two together pretty good, and we therefore copy it.

"I had," says he, "a conversation with a man lately, who was an experienced farmer, having farmed both in this State (N. Y.) and Ohio, and his manner of raising horse feed was this: I take about two and a half bushels of oats, and mix with them one bushel of rye, and sow this amount to the acre. The rye will support the oats in case of a heavy growth, and prevent lodging. In this manner I have raised sixty, seventy, and even eighty bushels per acre." The soil must have been very strong to do that, but the mixture is about in the right proportion.

CANADA THISTLES.—Few of our farmers are perhaps aware that there is a law standing on our statute books since 1844, imposing a penalty of $10 on any persons allowing this noxious weed to grow on their land or on any road adjoining the same. If the seed should mix with any other seed, and that seed is offered for sale, the penalty is $20.—*Ohio Capital Fact.*

ORDERS FOR TREES, &c., received, which will be attended to in due season:—J. S. J., Greencastle, Ind.; J. B., Kalamazoo, Mich.: O. S., Grand Rapids, Mich.; R. T., Hamilton, C. W.; T. N., Dutchess Co., N. Y.; R. V., Hartland, N. Y.; H. C. P., New Independence, Mo.

Mr. Editor:—Having noticed in some of the journals that grown wheat would not make light bread, I send you the following recipe: For one loaf of bread, a quart of milk and water—an equal quantity of each—a teacup two-thirds full of good hop yeast, a small teaspoonful of saleratus, and the same quantity of alum; mix to a thick batter, and let it rise; then mix very stiff, and make it into loaves to rise again. It must be well baked. In this way I have made good bread from grown wheat—if you know of a better way please insert it in the Farmer.

P. Harvey.

Inquiries and Answers.

If "A Farmer and Subscriber," Sciota Co., Ohio, will give us his name and address, we will write him on the subject.

A Subscriber—Waterford, Erie Co., Pa.—If your land is well drained, so that water will not lie on it during the winter or spring, you can sow this fall. If not, sow in the spring early, with oats or barley.

Raising Water.—Permit me to inquire if any method has been discovered for raising water for stock by the weight of the creature standing upon a platform, which works well in practice. A device of this kind was brought to notice through the *Michigan Farmer*, not long since, which to me appeared impracticable, except in case of a very shallow well, or a very heavy animal to stand on the platform. The plan consisted of a large tube or box, say one foot square, with a piston fitted, upon which the weight of the animal is made to bear, and the water thus forced through a small pipe entering near the bottom of the box and rising into a trough so placed that the animal must stand upon the platform in order to reach it. Now this at first view might seem very easy to accomplish, but when we come to investigate the established laws of hydrodynamics, we find that the weight of a heavy animal upon a piston one foot square could force the water up a small tube but a short distance. Indeed, if I rightly understand it, the size of the small tube is immaterial, since the same weight would raise the water to the same height in the small tube, whether it be one inch or one foot in diameter. Now a cubic foot of water weighs sixty-two and a half pounds; consequently a pressure of one thousand pounds upon a piston one foot square would raise water fifteen feet, allowing nothing for friction. The hydrostatic press is formed upon this principle, for by merely filling a small tube, half an inch in diameter and fifteen feet high with water, and connecting the lower end with a tight box one foot square, a pressure of one thousand pounds would be exerted upon each of the six sides: hence, if this reasoning is correct, water for stock can be raised only from very shallow wells by the above method; since the piston must descend one foot to supply one cubic foot of water—an insufficient quantity for a horse. But I have been informed that water is raised in New York State by some such method, and if it can be done economically, there are doubtless many of your subscribers in this western country who would like to be informed of the fact. I have since seen a statement of some one in the *Michigan Farmer* who had tried to raise water as above, but failed. J. C. Rogers—*Grand Rapids, Mich.*

We know of no such plan in operation in this State. We would go a long distance to see it in successful operation; but if we remain at home until we go on such an errand, we shall be in no danger of being killed by railraod collisions in some time.

My best wishes do ever go with the Genesee Farmer and the cause it advocates. There is much that is edifying and instructing in its pages, and it is well worth many times its cost, which cost is next to nothing, while its instructions are worth many a dollar.

We have had a very dry season, the first part in particular. No rain of any consequence after the last snow went off, till in July; and of course it kept everything backwards. Oats and wheat both suffered considerably, and a good many pieces are not worth harvesting.

We are much troubled with a new disease in this section among our water-melon vines, (or what is new to use), and we can't very well account for it. My own and some of my neighbors' are nearly all dead, just as they were showing signs of a good crop. The disease first shows itself by a sudden wilting of the vines, and then in a day or so the vine itself is covered with black spots near the root on the upper side, and then spreads along on the vine, which is dead to all intents and purposes. I have noticed that some of the vines appeared to have bursted the outer skin, somewhat after the fashion of rusty wheat, only they are not rusty, and they become very dry and black. I have not seen any insects about the vines, more than usual. The disease is sure death as soon as the vine is attacked, and we can not stop it, as one day does the business as effectually as a knife. Some of us have lost considerable money by the death of our vines before a single melon could rise; and we would be glad if you or some one of your many contributors could give any light upon the subject. I may as well remark that the vines in my garden were somewhat stunted in growth in the fore part of the season in consequence of the drouth, and after we had plenty of rain they grew fast; but there was no appearance of the disease for a month afterwards. Cyrus Gray—*St. Paul, Minnesota.*

Will some of your readers be kind enough to give me the information as to the best method of drying up a cow safely shortly after calving? J. T.—*St. Thomas, C. W.*

HORTICULTURAL.

Keeping of Apples.—Apples are frequently kept by farmers in pits or ridges in the ground, covered with straw, then a layer of earth about eight or ten inches deep. It is a poor method, as the fruit decays very rapidly when exposed to the air, and the quality is quite inferior. We are not aware that apples or fruit of any kind will be much longer in ripening in an ice house than in a cool cellar. Ice houses are very useful to preserve *ripe* fruits, as they can be kept in them frequently some days and retain much of the flavor. Cool, dry cellars are preferable to preserve apples, as well as other fruits, which are kept much better in covered boxes and barrels, excluded both from the light and air, than if exposed.

Keeping of Apple Grafts.—F. S.—Lacey Springs, Va. 1. It is not injurious to place boxes of grafts in a dark cellar, but is preferable. 3. Apple grafts if nearly covered with earth, allowing only the tips of the grafts to be exposed, will withstand, at times, four or five degrees of frost without much injury; but it is better that they be excluded wholly from frost. 3. Sand in which apple grafts have been packed may be used again. We can not see why the sand is not just as good as at first.

Our friends must not ask us to praise one implement or machine to the injury of others, perhaps quite as good. We are willing to give all necessary facts.

THIRD NATIONAL EXHIBITION
OF THE

UNITED STATES AGRICULTURAL SOCIETY,

TO BE HELD IN THE

CITY OF BOSTON,

On the 23d, 24th, 25th, and 26th of October.

$10,000 OFFERED IN PREMIUMS!

THE UNITED STATES AGRICULTURAL SOCIETY will hold their exhibition of stock,—CATTLE, HORSES, SHEEP, and SWINE,—in Boston, on the days above named.

ABSTRACT OF PREMIUMS.

The new and elegant Diploma of the Society will be presented to every exhibitor to whom a premium is awarded.

CLASS I.—CATTLE.

THE HERD PREMIUM.

For the best Bull and four Cows from any one herd..... $300
2d " " " " 100

DURHAMS, DEVONS, HEREFORDS, AYRSHIRES, AND JERSEYS.

18 premiums, amounting to.....$3,000

GRADE COWS, NATIVE COWS, AND MILCH COWS.

26 premiums, amounting to about.....$800

WORKING OXEN.

6 premiums, amounting to about.....$300

FAT CATTLE.

6 premiums, amounting to.....$250

CLASS II.—HORSES.

THOROUGH BRED STALLIONS AND MARES.

6 premiums, amounting to.....$650

STALLIONS NOT THOROUGH-BRED.

15 premiums, amounting to about.....$800

BREEDING MARES AND FILLIES.

13 premiums, amounting to about.....$600

MATCHED HORSES.

4 premiums, amounting to about.....$400

FAMILY HORSES.

4 premiums, amounting to.....$250

DRAFT HORSES.

6 premiums, amounting to.....$250

TROTTING HORSES.

On Tuesday Afternoon.

1st premium.....$200
2d " 100

On Wednesday Afternoon.

1st premium.....$200
2d " 100

On Friday Morning.

1st premium.....$300
2d " 100

CLASS III.—SHEEP.

LONG WOOLED, MIDDLE WOOLED, MERINOS, AND SAXONS.

48 premiums, amounting to about.....$900

CLASS IV.—SWINE.

SUFFOLK, ESSEX, AND OTHER BREEDS.

36 premiums, amounting to about.....$500

The show grounds will be ready for the reception of stock on and after October 18th. Persons intending to exhibit are requested to notify the Secretary on or before October 1st.

A half-mile track will be prepared for the trial of horses, and commodious seats for spectators furnished at a small charge.

A grand Agricultural Banquet will be held on the grounds on Friday afternoon, at which the premiums will be announced, and eloquent addresses may be expected from distinguished gentlemen. The ladies are expected to participate in the festivities.

The various railroads in New England will return stock free of charge, and arrangements to the same end with other roads are in progress.

Premium Lists, &c., will be forwarded on application to the Secretary.

MARSHALL P. WILDER, President.

WM. S. KING, Secretary.
Boston, September, 1855. Oct.—1t.

ADVERTISEMENTS,

To secure insertion in the FARMER, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers. TERMS—Two Dollars for every hundred words, each insertion, PAID IN ADVANCE.

FRUIT & ORNAMENTAL TREES, SHRUBS, ROSES, &c.,

FOR SALE BY JAMES VICK & CO.

THE subscribers will be prepared from and after the first of November to receive and execute all orders for Fruit and Ornamental Trees, to be delivered the ensuing spring.

We are well aware of the impositions that have been practised heretofore by tree agents, but as we intend devoting our entire attention to the business of selecting, packing, and shipping Trees, &c., and not being connected with any nursery, we are determined to hold no other object in view but that of supplying our patrons in every instance with the best articles.

We will purchase Trees, &c., only from the most reliable nurseries, attending personally to the selections. If our customers leave the selection to us, we will furnish the varieties best suited to their respective localities. As we are well acquainted with all the nurseries in this State, and know exactly where to find the suitable stock, it is a still further guarantee to our customers that their wants will be supplied in the best manner.

Our Mr. VICK has been connected with the horticultural community for many years as the proprietor and publisher of the *Genesee Farmer* and *Horticulturist*, and for many years past persons from all parts of the country have urged upon him the necessity of forming arrangements that would meet the wants of the public by attending to the selection of orders, seeing the articles packed and shipped, thus affording a guarantee that the requisite attention would be paid to all orders sent forward. In order to meet their views he has formed a copartnership with Mr. GEO. MARSHALL, who has been connected with the nursery business for the past five years, and he begs to assure the public every attention will be paid in every respect to all who may favor them with their orders.

As a still further assurance that we will execute to the letter every wish of our patrons, and our ability to meet our engagements, we beg to refer to the following gentlemen:

Hon. WASHINGTON HUNT, Ex-Governor of New York.
Hon. H. STILWELL, Ex-Mayor Rochester.
A. KARNES, Esq., Banker.
J. C. CAMPBELL, U. S. Collector.
H. SARGEANT, Dep. "
LEE, MANN & Co., Prop. Rochester Daily American.
CURTIS & BUTTS, " " " Union.
A. STRONG & Co., " " " Democrat.
D. D. T. MOORE, of Moore's Rural New Yorker.

All letters addressed to us at Rochester, N. Y., will meet prompt attention.

Persons sending orders must enclose the cash, a draft, or satisfactory note for amount of order.

Catalogues will be supplied upon application.

JAMES VICK & CO.,
Oct. 1. Rochester, N. Y.

W. R. PRINCE & CO., FLUSHING, N. Y.,

WILL forward the following Catalogues of their UNRIVALED COLLECTION to purchasers of trees, and to others who enclose stamps. The prices will be found greatly reduced, and the Trees and Plants are the finest ever offered:

No. 1. Fruit and Ornamental Trees, Shrubs, and Plants; and No. 2. Roses, Dahlias, Bulbous and Herbaceous Flowering Plants, &c., both 40th edition. No 3. Extra large Fruit Trees, Evergreens, and other Ornamental Trees and Shrubs. No. 4. Wholesale Catalogue for Nurseries and other Venders. No. 5. Catalogue of Garden, Agricultural, Flower, Fruit, and Ornamental Tree and Shrub Seeds. No. 6. Descriptive Catalogue of Strawberries. No. 7. Catalogue of rare American Trees, Plants, and Seeds, suitable for sending to Europe. No. 8. Catalogue of Fruit and other Tree Seeds, and of Stocks of all kinds, for ingrafting Fruit Trees, &c. No. 9. A Supplement Catalogue of Bulbous Flowers, New Dahlias, Pæonies, Chrysanthemums, Phlox, Carnations, and other Flowering Plants. No. 10. Wholesale Catalogue of Bulbous and Tuberous Flowers.

N. B. 50,000 Premium Strawberry Plants, including those that surpassed Hovey's Seedling and every other kind exhibited. 1,000 *Diascorea Japonica*, or Japan Potato; 10,000 Liquorice Plants.

Oct.—1t*

FRUIT AND ORNAMENTAL TREES, &c., &c.

THE subscribers offer for sale this fall in lots to suit purchasers, 50,000 Apple Trees, 5 to 9 feet high; also a large quantity of standard and dwarf Pears, Peaches, Plums, and Cherries; Grape Vines, Currants, Gooseberries, Raspberries, Strawberries, Ornamental Trees, Shrubs, Roses, Green House Plants, &c., &c. Also, 200,000 splendid two year old Apple Stocks.

Nurserymen, Dealers, &c., will do well to give us a call, as our prices will be extremely low.

JOHN DONNELLAN & NEPHEWS.
Oct.—1t* Rochester and Hanfords Landing Nursery.

A. FROST & CO.

GENESEE VALLEY NURSERIES, ROCHESTER, N. Y.

THE stock of Fruit, Ornamental Trees, &c., offered by us this season is very large, and much the finest that we have ever had for sale.

Our Nursery grounds at the present moment occupy one hundred and fifty acres of fine land, completely covered with very thrifty and well grown plants, which enables us to furnish the entire orders from customers, and give the most perfect satisfaction. Packing of trees and plants is done in the most superior manner, by men of long experience in the business, so that plants may go thousands of miles in perfect safely.

Our wholesale catalogue (No. 4) for the Autumn of 1855 and Spring of 1856, has just been published for gratuitous distribution, containing the prices of Trees, &c., in large quantities.

Nurserymen are particularly directed to notice our choice young Nursery stock, described in above catalogue, such as fruit trees 1 year old, from bud or graft; fruit tree stocks of every description, evergreens of small size, &c.

The following catalogues, containing prices, will be sent *gratis* by mail to those who enclose a one cent postage stamp for each:

No. 1 Descriptive Catalogue of Fruits.
No. 2 " " " Ornamental Trees, Shrubs, Roses, &c.
No. 3 Descriptive Catalogue of Dahlias, Verbenas, Green House plants, &c.
No. 4. Wholesale Catalogue or Trade List, (just published.)

Sept. 1-1t.

ANDRE LEROY NURSERIES, ANGERS, FRANCE.

THE undersigned begs leave to inform his numerous friends and customers that he is now ready to execute all orders for Fruit, Forest, and Ornamental Trees, Evergreen Shrubs, Stocks, &c., &c. His collection is particularly fine this year for all kinds of Trees except Quince Stocks, the crop of which has again failed. The Catalogue for 1855 is now ready for distribution, and all those who wish to procure a copy can obtain one free of charge by addressing our agent in New York, Mr. F. A. BRUGUIERE, 138 Pearl street, successor to our former agent and friend, Mr. E. BOSSANGE, who has retired from business. Orders should be sent at once to secure a complete assortment. All required information to import Trees, &c., will be found on the first page of our Catalogue.

ANDRE LEROY, Angers.
F. A. BRUGUIERE, Sole Agent, 138 Pearl st., N. York. Oct.

LAWTON BLACKBERRY.

HAVING the present season had additional opportunity to satisfy ourselves of the superiority of the LAWTON BLACKBERRY, we have accepted the agency therefor from Mr. WILLIAM LAWTON.

We can confidently assure the public that this extraordinary fruit fully sustains its reputation, being of mammoth size, with a fine melting pulp, and rich flavor. It is perfectly hardy and requires no extra care in its cultivation. We are now prepared to receive orders, which will be filled direct from the grounds of Mr. LAWTON on and after the 15th of October.

The plants will be carefully and securely packed without extra charge, and forwarded from New York at the following reduced prices:—Half a dozen, $3; one dozen, $5; fifty plants, $15; one hundred plants, $25. The money must in every case accompany the order.

C. M. SAXTON & CO.,
Agricultural Book Publishers,
Oct—3t 152 Fulton street, New York.

CHOICE FRUIT TREES

THE subscriber offers for sale at his Nurseries, Pinehill, Buffalo, N. Y., 25,000 FRUIT TREES—Apples, Pears, (standard and dwarf,) Cherries, Plums, and Peaches of the best leading varieties, wrought on the most vigorous stocks. Prices very moderate. Catalogues furnished on receipt of a postage stamp. Orders addressed to H. C. WHITE, Buffalo Seed and Agricultural Warehouse, 196 Main street, Buffalo, N. Y., will receive prompt attention.

G. ZIMMERMANN,
Oct—1t Four Mile Creek P. O., Erie Co, N. Y.

PREMIUM STRAWBERRIES

WILLIAM R. PRINCE & CO., FLUSHING, N. Y.,

WILL now supply all their splendid varieties of Strawberries, including those which have rivalled Hovey's Seedling, and every other kind exhibited. A Descriptive Catalogue, with prices, will be sent to applicants.

N. B.—A new Catalogue of Bulbous Flowers, and of all new Plants, now ready for applicants.

Sept. 1.—2t.

TO NURSERYMEN.

50 BUSHELS Canada Plum Stones for sale. Just collected and warranted true. Price $12 per bushel.

C. KELLY & CO.,
Oct.—2t* Hamilton Nurseries, C. W.

FAIRBANKS' SCALES.

WAREHOUSE No. 189 BROADWAY, NEW YORK.

THESE celebrated Scales are still manufactured by the original inventors. By the enlargement of their work, and the introduction of improved machinery, these Scales are now furnished at greatly reduced prices. We have recently added to our stock a full assortment of *fine Gold and Druggist's Scales, Spring Balances, Patent Beams, Weights, &c.*, and now offer at wholesale and retail the most complete assortment of weighing apparatus to be found in the United States.

We have a new and convenient article which we denominate the *Family Scale*, it being particularly adapted to the wants of farmers and all housekeepers.

Hay and Coal Scales set in any part of the country by experienced workmen.

Orders and letters of inquiry by mail, will receive prompt attention.

FAIRBANKS & CO.,
August 1, 1855—3t. 189 Broadway, New York.

PERUVIAN GUANO.

PERUVIAM GUANO No. 1, with Government weight and brand upon each bag. Price $52 per ton of 2,000 lbs.

PERUVIAN GUANO No. 1, taken from the lower part of the cargo, a little damp, with above brand upon each bag. Price $43 per ton of 2,000 lbs.

As the latter article is sold by some retail dealers for the best quality, be particular to observe that the *damp* Guano has the figure 2 under the weight mark. For sale by

ANTOINE LONGETT,
August 1—3t. 34 Cliff St., corner of Fulton, New York.

MANSFIELD'S IMPROVED PATENT

CLOVER HULLING AND CLEANING MACHINES.

THESE Machines obtained the first Premiums at three successive Ohio State Fairs; also at the World's Fair, New York, and never failed to take the first premium wherever exhibited.

It hulls and cleans from 25 to 50 bushels per day.

Manufactured and for sale by
Price $100. M. H. MANSFIELD.
Ashland, Ohio, August 1, 1855—3t.

THE SHAWM,

BY W. B. BRADBURY and GEO. F. ROOT, now enters upon the third year of its publication. Its large amount of matter, original and selected, its "Singing Class," its "Original Cantata," its Anthems, etc., justify its title—A LIBRARY OF CHURCH MUSIC. The extraordinary sale of THE SHAWM during the first two years of its publication, sufficiently attests it popularity.

A single specimen copy will be sent by mail, post-paid, for examination, to any teacher of music or choir-leader on the receipt of SEVENTY-FIVE CENTS. Published by MASON BROTHERS,
Oct.—1t* 23 Park Row, New York.

THE HALLELUJAH,

LOWELL MASON'S new collection of Church Music, contains upwards of ONE THOUSAND pieces of music, adapted to about one hundred and twenty metres, and a much larger variety than usual of Anthems and other Set Pieces. The ELEMENTS of MUSIC have been especially prepared for Singing Classes—a variety of pleasing exercises, four-part songs and rounds interspersed, and there is added MUSICAL NOTATION IN A NUTSHELL—a brief course for schools.

A specimen copy will be sent, by mail, post-paid, FOR EXAMINATION, to any teacher of music, or leader of choir, on receipt of SEVENTY-FIVE CENTS. Published by

MASON BROTHERS,
23 Park Row, New York.
SANBORN, CARTER & BAZIN, Boston. Oct. 1t*

PLEASANT AND PROFITABLE EMPLOYMENT.

IN every town and village, for Men and Women, to sell our neat, cheap, and quick-selling Books, and to canvass for our Popular Scientific Journals. *All who engage with us will be secured from the possibility of loss.* Profits, very liberal. Please address

FOWLER & WELLS,
Oct.—4t 808 Broadway, New York.

AGENTS WANTED.

MAKE MONEY WHEN YOU CAN.

THE subscribers desire to procure the undivided time of an Agent in every county of the United States. Efficient and capable men may make several dollars per day, without risk or humbuggery of any kind. Full particulars of the nature of the business will be given by addressing the subscriber, and forwarding *One* Post Office Stamp to prepay return postage.

FUREY & CO.
Oct—1t* No. 520 6th st., Philadelphia, Pa

TO ALL AGUE SUFFERERS.

NEW PRINCIPLE! NO POISON!!

RHODES' FEVER AND AGUE CURE; OR, ANTIDOTE TO MALARIA.

FOR the prevention and cure of Intermittent and Remittent Fevers, Fever and Ague, Chills and Fever, Dumb Ague, General Debility, Night Sweats and all other forms of disease which have a common origin in *malaria* or *miasma*.

This is a NATURAL ANTIDOTE which will entirely protect any resident or traveler even in the most sickly or swampy localities, from any Ague or Billious disease whatever, or any injury from constantly inhaling Malaria or Miasma.

It will instantly check the Ague in persons who have suffered for any length of time, from one day to twenty years, so that they need never have another chill by continuing its use according to directions. The patient at once begins to recover appetite and strength, and continues until a permanent and radical cure is effected.

One or two bottles will answer for ordinary cases; some may require more. Directions printed in German, French, and Spanish, accompany each bottle. Price One Dollar. Liberal discounts to the trade.

JAS. A. RHODES, Proprietor, Providence, R. I.

PROOF OF SAFETY.

NEW YORK, June 11, 1855.

I have made a chemical examination of "Rhodes' Fever and Ague Cure," or "Antidote to Malaria," and have tested it for Arsenic, Mercury, Quinine, and Strychnine, but have not found a particle of either in it, nor have I found any substance in its composition that would prove injurious to the constitution.

JAMES R. CHILTON, M. D., Chemist.

EVIDENCE OF MERIT.

Extract of a letter from Prof. Fletcher, who was cured while engaged at Brown University, Providence, R. I.

INDIANAPOLIS, Ind., March 1, 1855.

JAMES A. RHODES, ESQ.—*Dear Sir:* Yours of the 15th ult. has been received, and I am glad to hear that a medicine so efficacious is to be introduced into this aguish country. I have the greatest confidence in its success, and can re-assure you of its happy effect upon me in entirely breaking up the chills and leaving me strong and healthy.

I like the statement on your wrappers that you will let the medicine stand on its own merits; and standing thus, I am most sanguine of its success.

I expect to travel over a large portion of our State this Spring, and I shall have abundant opportunity to recommend it verbally. Wherever I go I shall take great pleasure in thus testifying to its merits, and if you will instruct your Agent to let me have a few bottles, I will carry them with me to distribute for your benefit.

In haste, I remain, truly yours, MILES J. FLETCHER.

LEWISBURG, Union Co., Pa., May 2, 1855.

Mr. J. A RHODES—*Dear Sir:* The box of medicine you sent me was duly received on the 11th of April. I have sold about one-half of it, and so far the people who have used it, are satisfied that it has cured them. It has certainly stopped the Ague in every one who has used it, and six of the cases were of long standing. My sister, who has had it for five or six years back, and could never get it stopped, except by Quinine, and that only as long as she could take it, is now, I think, entirely cured by your remedy.

LEWISBURG, Union Co., Pa., July 27, 1855.

Mr. J. A. RHODES—*Dear Sir:* I have but three bottles of your medicine left, as I have been selling it very fast during this month. I am now perfectly satisfied that it will cure the Ague. I have lived here four years, and had the the Ague all the time until I took your remedy; I have not had the least symptom of it since. All that use it praise it, as the only thing that will cure it.

I shall want some more as soon as you can send it, as I shall be out of it in a day or two.

Let me know whether I shall remit the money due you by mail, or whether an agent will call for it; and hoping to receive another lot soon, I remain, Yours respectfully,

C. McGRINLEY.

Had the Ague for Twelve Years!!

PROVIDENCE, June 29, 1855.

Having been informed of the illness of a poor but worthy woman, who has not been free from Fever and Ague a month at a time for the last twelve years, I supplied her gratuitously with Rhodes' Fever and Ague Cure. She took in all four bottles, which completely restored her to health and strength, and as four months has now elapsed, there is no reason to doubt the permanency of the cure.

I am also aware of many other cases in which it has been used, and have never known it to fail.

C. A. P. MASON, Apothecary.

Messrs. Barr & Goulden, Aurora, Ill., July 3, 1855, advise that "The Cure is selling very well. *We have not lost a case*, and consider it a sure thing; also recommend it in preference to any thing else." When Mr. Barr was requested to take the agency, he said he "should *have nothing to do with it*, unless he found it better than the other Ague remedies already in the market."

Messrs. Craighead & Browning, Indianapolis, Ind., July 9, 1855 say that "all we have sold has given full satisfaction, and we have no doubt of selling a large quantity as soon as the Ague season sets in."

MOUNT CLEMENS, Michigan, July 21, 1855.

Mr. J. A. RHODES—*Dear Sir:* Send me half gross of your Fever and Ague Cure as soon as possible. I have neglected to order until I sold the last bottle. Yours, H. R. BABCOCK.

PINE RUN, Michigan, July 31, 1855.

DR. J. A. RHODES—*Dear Sir:* Your Cure for the Fever and Ague has thus far performed wonders. It has not failed in one instance to perform a quick and permanent cure. Some that have been troubled with the distressing disease have been *entirely cured* by using *only one* bottle of CURE. Please send us four dozen, as we have but three bottles remaining. Truly yours,

LATHROP & McLEAN.

CAUTION TO AGUE SUFFERERS.

Take no more Asenic, Mercury, Quinine, Strychnine, or Anti-Periodics, or medicines of any kind, the virtue of which is owing to such poisonous drugs. The most they can do is to "break the chills" for a short time, while they are sure to cause constitutional maladies that cease only with life. Remember that the only Fever and Ague remedy that is HARMLESS as well as SURE, is

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Sept. 21.

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